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I

THE EDUCATION OF THE NERVOUS SYSTEM

Education consists in modifications of the central nervous system, the cell elements of which are peculiarly fitted for this experience. They are plastic in the sense that their connections are not rigidly fixed or limited, until quite late in life; and they remember, or to use a physiological expression, tend to repeat, previous reactions. By virtue of these powers, the cells can adjust themselves to new surroundings, and learn to respond with great precision and celerity to such impulses as are familiar, because important.

In its size and development the central system is precocious. Long before birth, all the cells destined to compose it are already formed, though by no means all are developed, in the sense that they have acquired the form and functions characteristic of them at maturity. At the close of embryonic life the sensory nerves rapidly extend, and the connection of the central cells with the limiting surfaces of the body being thus established, all experiences become those of education. The act of living is thus a natural educational process of the very greatest importance; yet it is usual to restrict the term education to a series of much more formal events, falling within the period of school-life.

Formal education, as such, may have objects which are quite as distinct as those of gymnastics and athletics, in the field of muscular training. In their extremest forms these two aims are distinguished by the fact that the athletics or technical

training fits the individual to do some one thing which in his day and generation is considered desirable, while the culture or gymnastic method seeks to round him by the better exercise of weaker points, so that his activities may be more complete. In earlier education, the culture method, though often disguised, is yet the one mainly pursued, and it is the significance of this method which will here be considered.

In the development of the central system, it is found that an anatomical framework is first formed. In this framework are represented, in outline, the nerve structures whose functions are most fundamental. These with later growth are locally strengthened and organized, and by the establishment of associative paths, gain both a wider influence and greater complexity of reaction. In the history of this unfolding of the nerve centers, atavistic tendencies crop out. Most interesting perhaps are the prehensile capacities of the great toe, and the clinging powers of infants during the first four weeks of life.[1] These capacities, like the sucking reflex, disappear sooner or later, leaving no traces behind, but there can be little doubt that proper examination of the centers concerned would show a peculiar histological basis for the reactions. It is but rarely that a vanishing power can be thus tracked, yet there is ample suggestion that many ancestral phases are for a time exhibited and then outgrown by the maturing brain.

In development sensibility comes first. Indeed the sensory system in certain human monsters may be well developed, although both central and motor elements are quite wanting. To this general sensitiveness, evident early in fetal life, and without which the central system ceases to be significant, there are rapidly added, about the time of birth or shortly after, the more special sensations of taste, smell, touch, hearing and sight, and temperature. Then, as organization progresses, come the emotions of fear, astonishment, anger, closely followed by development of the intellect and will, with the power of language and self-consciousness. This is not the place to essay the reduction of all these various expressions,

[1] Robinson, *Nineteenth Century*, May, 1891

intended to indicate grades of mental development, to their physiological equivalents. Since, following birth, the special senses first become useful, the various reactions of the individual are customarily associated with sight or hearing. That this is somewhat a matter of chance, the education of all defectives shows. The development of the parts of the brain devoted to the mediation of the special sensations, like hearing and sight, is rapid at first, then slow, yet continuous up to maturity, as is shown by the continuation of cortical growth. With the refinement in sense perception and the accompanying central changes comes a corresponding increase in the control exercised by the motor elements, and in the elements theselves an increase in the strength, accuracy, and speed with which they respond.

Such is the development from the standpoint of the increasing organization of the system at large. Among the sensory and central constituents are changes of a different sort. In the very young the mental processes are limited by the fact that memory is very poor. As this power increases it becomes possible to hold the mental image for a longer time until finally a large fraction of the mental operations involves the employment of such images, which may be present in the terms of any sense. Thus the child first receives impressions which are quickly lost, then those which are remembered for a time, and finally accumulates a store of memories which enter as modifying factors into all subsequent mental activity. Advanced age has it in common with childhood that the images are easily mislaid, but, when available during the period of senescence they are more complete. The study of sensory aphasia, designating by this a loss of the power of recognition or expression consequent on injury to the sensory or central elements, has helped much to the understanding of the manner in which these mental images are constructed. Analysis indicates that the notion of a brass bell is built up from its smell, taste, temperature, weight, shape, color, and the sound it makes, though the information obtained through the eye and the ear is that on which we commonly rely: but a blind-deaf

person would emphasize the other sources of information. When an impression has been received from a bell the fact may be indicated, by a sound; the name, or an imitative noise; or a gesture of some sort; a picture or a written word. In the ordinary right-handed person, it is the injury to the left cerebral hemisphere between the sensory and motor regions that most often gives rise to symptoms of aphasia. The symptoms vary with the location and extent of the lesion, but depend on the stoppage or diminution of the nerve impulse at some point between its arrival at the cortex and its transfer to the efferent cells, used for the response. The study of aphasic patients has brought out the fact that any one or more of the several events involved in recognizing the bell by means of the principal sense and expressing this recognition in the usual way, by the written or the spoken word, may drop out. So, for example, the patient may be unable to speak or write the word "bell," when a bell is simply seen, but at the same time, be able to do both, if it is also heard. Or the sound may elicit only the written but not the spoken word, and so on through the possible combination of sensations and forms of expression. Thus the impulses reaching an expressive center, and proving too weak to cause the discharge of it, may still prove efficient if combined with the corresponding impulses from another sensory center to which the object also appeals. It is therefore the passage of impulses from all the sensory centers stimulated by the object that gives the basis for the most perfect response. Clinical studies of the kind furnish grounds for the idea that the presentation of an object to any one of the senses revives the mental image of that object in terms of the other senses which may be, and formerly have been, excited by it, and that the more vivid these associated images, the more complete and clear is the conception. When the possibility of forming the extra images is curtailed, the conception becomes weaker, more special, and less reliable. When the sight of the bell causes it to be named, the changes in the brain are not duplicates of those occurring when the sound of it has led to the same reaction. In the two cases the same

expressive centers have been directly roused by *different* sets of fibers, one from the auditory and one from the visual centers, and the secondary revivals have been correspondingly modified. The bearings of these facts are very wide. Among mammals it is a familiar observation that some, like the rat, are dependent on the sense of hearing, or like the cat, on that of sight, or the dog on that of smell. This means that the mental images which rule these animals are in terms of the dominant sense; and anatomically, that the cortical centers for the dominant sense are those best connected with the motor areas. When men are compared, there are possibilities for very wide differences in these arrangements, the eye rather than the ear being generally the dominant organ. Something of this arrangement is doubtless due to training, but probably much more to anatomy. It is interesting to note that in these days of printing a large proportion of our second-hand information reaches us through the eye, while in earlier centuries the ear was the main channel. Further, owing to anatomical peculiarities, an individual may be persuasive with his pen, and yet a doubtful orator. Such everyday combinations can be easily explained. A given sensory center in the brain is not connected impartially with either the center for the movement of the hand and arm in writing, or that for the muscles of phonation used in speech; but wide differences in this relation may exist, so that the speaking and the writing man are somewhat different persons. From this standpoint the working value of the mental images appears as dependent on the number and balance of the secondary sensations which accompany them. The greater the number of these, the more certain and precise is our thought. For this reason, the development of the intelligence is associated with the perfection of more than one sense organ, whereas reliance on a single avenue of sense, while it may lead to very precise reactions, graded in accordance with the intensity of the single sort of stimulus, leaves us without those fringing sensations which form the basis for distinction and comparison necessary for a judgment

In biological equations the values of the different factors are often normally open to wide variation. I have elsewhere[2] insisted on the threefold composition of the central system, one division afferent or sensory, another central or distributive, and the third, motor or efferent; each one of these divisions being represented by a distinct anatomical portion. It is readily seen that an unusual degree of responsiveness among the central cells gives us the intellectual type of reaction. Where the efferent portion is well organized, there are found the anatomical conditions for the man of affairs or action, while exaggeration of the afferent or sensory component leads to a purely passive existence, or to hysteria, according to circumstances.

The connection between the exercises of formal education and brain change is not a very close one. It is not known how years of schooling affect the central system, and it is not probable that we shall soon arrive at facts of this sort. Available, however, are the facts of anatomical growth during this period, and to these plausible explanations may be given.

The aim at the moment, therefore, is to determine what limitations anatomy places to the educational process, and thus to obtain a rational basis from which to attack many of the pedagogical problems. It appears probable that the education of the schools is but one, and that too rather an insignificant one, of many surrounding conditions influencing growth. The average individual is first subjected to some formal training when about three years of age. At this time the *number* of cell elements is complete, and the history of future organizations is in broad outlines determined by their first arrangement. Examination shows that but a fraction of the elements have begun to develop, though growth is everywhere visible and some of the most precocious elements have attained almost their final size. The encephalon at this age has more than two-thirds its adult weight. It is during this last stage of the growing period, which to be sure may continue into the

[2] The reference is to a forthcoming book on *The growth of the brain*, of which this is a chapter.

forties, that formal education is called upon to modify the central system. There are anatomical reasons for thinking that this later organization demands but slight increase in weight, though having much effect on the possible reaction, because, although many nerve elements are in the granule stage of development and without prolongations, yet others possess prolongations which have taken all but the last step necessary to the establishment of full functional connections with neighboring cells, and hence the constructional change demanded is, for such cells, very small. The motive to this change in any part of the system is probably the improved circulation giving a larger supply of blood, and the direct action of the nerve impulses putting the cells in a chemical condition to best make use of the surrounding nutriment. Such being the conditions, two things must happen. Education, coming so late in the history of growth, must fail to produce any fundamental changes in the general architecture of any system, but to some extent it can strengthen formed structures by exercise and in part waken into activity the unorganized remnant of the dormant cells. No amount of cultivation will give good growth where the nerve cells are few and ill-nourished, but careful culture can do much where there are those with strong inherent impulses toward development. On neurological grounds, therefore, nurture is to be considered of much less importance than nature, and in that sense the capacities that we most admire in persons worthy of remark are certainly born rather than made.

Among children there are the widest variations in congenital composition of their central systems, and similarity is neither desirable nor liable to occur, save among the members of the same family, or, better still, in some cases of twins. It has been made probable that, by the cultivating processes of school-training, the formed structures tend to be strengthened, dormant elements roused to further growth, and organization made more perfect in this or that direction, according to the nature of the exercise. By strengthening the formed cells their powers of differential reaction, of organic memory, and

resistance to fatigue are increased. By associating given sets of muscular reactions with given sense impressions, habits are established in consequence of further organizations among the elements, and finally, nutritive rhythms associated with the periods of activity and rest appear, with the result of economizing the bodily energy and rendering its expenditure more effective. In general, the power of sense discrimination increases with age, because such discrimination depends mainly on central arrangements, which are not fully elaborated in the earliest years; but where it depends on peripheral arrangements, the power may really decrease. Thus Czermak has brought forward evidence that the power to discriminate two points on the skin is rather finer in children than in adults, owing to the better innervation of the skin in the former; for, as growth proceeds, the skin increases in area more rapidly than the nerves which supply it increase in number. In the power of discrimination based on the condition of the peripheral sense organs will probably be found the anatomical condition in large measure controlling the scale of human performance. Here we have in mind the size of things made by man, ranging from the minute and painfully accurate constructions to the broad and carelessly general. Perhaps the extreme scales found in painting and sculpture will best illustrate the point.

While, in long periods, fatigue in mental operations can be demonstrated, in short periods the results are not so clear, owing in part to the complication caused by the daily rhythms. Moreover, in the longer tests it is difficult to give proper values to the quantitative reduction in the work done and at the same time to the decrease in accuracy, since the two do not run a parallel course. Ebbinghaus' most elaborate experiments on memory are here in place; they show the easy onset of fatigue following such tests, and the enormous value of exercise, alternating even with lengthy periods of rest. Bolton, who studied in scholars from eight to fifteen years of age, the memory span, for a series of digits up to nine, found the length of the span, as well as the accuracy of the reproduction of any series, to

increase with age. These improvements in the central cells find an equivalent modification in the motor elements. Grigoresce examined a number of children of the ages below given to determine the strength of their grip as shown by the dynamometer. The figures expressing the power of the grip for each year are in every case averages of a hundred observations.

Age	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years
Strength, Kilos of Grip	12.21	13.97	16.52	19.17	20.58	20.97	22.13	27.21	33.04

To be noted in this table is the remarkable increase during the fourteenth and fifteenth years, equal in amount to that occurring in the previous seven. In *The autobiography of a strength-seeker*, Windship records most astonishing gains in strength later in life. The case of Windship is certainly exceptional, but has some interest by reason of the fact that, though these gains are always a mixed result of changes in the muscle as well as the central nervous system, yet the later in life they occur, the more the central system must be held responsible for them, since the muscles soonest reach a limit of growth.

If we recall the sudden strength of very moderately developed men during attacks of maniacal frenzy, it will serve to suggest the latent possibilities resident in the central system.

In all functional activities a tendency to the formation of habits occurs. Concerning these associations, there is one feature of much educational importance, generally recognized, to be sure, but which at the same time has been made more clear by the investigations of Bergstrom. In these experiments the attempt was made to sort as rapidly as possible a pack of cards, placing the single cards in piles according to suit. Another pack, with the cards in a different order, was then taken and the experiment repeated. This second trial took much longer than the first. The increase in the time was found to be due, not to fatigue, but to certain associations formed during the first sorting, whereby a given suit was connected with a pile having a given location on the table. In

the second pack, the order of the cards being different, the suits on the table were differently located, and the memories of the first associations still persisting, they directly interfered with the second performance, causing false movements and so increasing the time. The demonstration here of the loss of energy in learning what needs only to be unlearned is very striking; and if one experience can produce such an effect, it is easy to understand how habits early formed, and long cultivated, become so difficult of eradication. With habits come rhythms in activity, and granting the importance of these, the training should be so adjusted as to catch the system at the most favorable moments. In the history of organization there are naturally many errors, happily for the most part transient. Here belong all those vague suggestions of a second personality, which in growing children are so perplexing and so numerous.

Sometimes these peculiarities periodically recur, and at adolescence they are most accentuated. They represent the disharmony of those changes leading to progress, and like mirror-script, gibberish talk, and the various forms of general inanity, are but intermediate phases between the imbecility of the infant and the intelligence of the adult. Exercise carried on during the growing period leaves its trace, and conversely we should hardly expect much appreciation of color in a person brought up in the dark, however good his natural endowments in this direction. Thus, any lack of early experience may leave permanently undeveloped the appropriate centers in the central system, a condition of much significance; for each locality in the cerebrum is not only a place at which reactions may occur, but also one through which pass fibers having more distant connections, and its imperfect development probably modifies the association value of these as well. It is generally recognized that the work of thinking can be carried on in terms of the several senses. By way of practical application of this idea, Fraser has made an examination of certain philosophic writers which indicates that individuals and schools prefer sense images of one mode in their specula-

tive thought, others taking a different mode. Much of the failure of these writers to be mutually comprehensible depends on the fact that mental images, like the tactile and visual, for example, are by no means capable of manipulation in the same manner, and hence, what was conceivable in the terms of one sense was often not so in those of the other. With the exclusive employment of one sort of mental image, comes precision, but it is precision gained at the price of limitations. Fortunately the law of the diffusion of incoming impulses normally works against a too great specialization in this direction. Yet in the highly defective, this specialization must be carried very far, and in those whose endowments are distinctly unusual the dominance of one sense in controlling the reactions of the central system may rise to the dignity of a deformity.

It would be a palpable truism to insist that persons are very different in the anatomy of their nervous system, and hence in their nervous activities, were it not that educational practice appears so often to start with contrary assumptions.

The description of racial differences is a literature by itself, and the traits of widely separated classes in the same community are almost as different as those of races. In Bavaria, Ranke found the cranial capacity of the town-people distinctly greater than that of the peasants in the surrounding country; a relation which probably means that in general the better endowed individuals sought the severer struggle of the town with its greater excitements and compensations. Should it turn out on further examination that some of the lower races lose their capacity for later training after adolescence, we should look with interest at the cerebral cortex in order to determine whether growth there practically ceased at this time. Recent observations show that in Europeans the brain continues to grow beyond the twenty-fifth year. Venn, studying the size of the head in Cambridge students, found it to be on the average greater in the group of more successful men, and to increase in them for a longer period than has been elsewhere found. Yet the intellectual accomplishments of this fortunate group have no ethical significance. They may

be admirable, just as are the paces of a well-bred colt, but the colt deserves no credit for its gait. Indeed, the observation of Ranke, just quoted, stands as an anthropological vindication of that tendency to use native endowments, so as to get from them all the stimulation of which our sensory system is capable. It is a deeply seated impulse. The defective sense organ or the paralyzed limb are treated very roughly by its owner in the vain hope of getting a sensation from them. It would appear that the parts of the nervous system cut off from their normal stimuli may, so long as they are alive, cause much discomfort, and the individuals possessing them resort to indirect means to get rid of the resultant irritations. The obverse of this condition is the "breaking out" experience so common in all communities of growing individuals. In prisons, schools, and similar institutions, where hard physical exertion is not compulsory, or the routine is deadly monotonous, such explosions are bound to occur. Some years ago, when college athletics were coming into vogue, Professor Richards pointed out that college rows and disorders fell off as athletics came in. It is not easy to make experiments of this sort, but there is no doubt that, during the growing period, this surcharging of the nervous system, though not regular, is an event to be expected, and may take almost any form in its expression.

In this connection the consideration of the problems of education as modified by sex forms an important topic. While, from the anthropological standpoint, there is a typical man and typical woman for each race, these are not the same for different races. In the secondary sexual characters there are some distinctions of general applicability; for instance that women are on the average smaller than men. Stature and weight are, together with proportion, the best marked secondary characters by which the sexes are distinguished, and yet these overlap in every way. Among the secondary characters are those of the nervous system, and there we find a similar overlapping. There is no question about the fact that women have on the average smaller brains, though the record from a better

class of women than those furnishing the data now employed, would perhaps raise the average. This small absolute weight is in no wise mitigated by the observation that the weight of the brain as compared with the weight of the body is greater in women than in men, for it can be easily shown that if this were a criterion, we should all bend before the massive intelligence of the new-born child whose proportional brain-weight is six times greater than that of the adult. The suggestion has been made that the female brain is lighter because its structural elements are smaller. The only interpretation that we have for the size of these elements is as an expression of the power to store and discharge force in a short period of time and to furnish branches for structural connections. Such a brain of small elements, no matter to which sex it belongs, has the same characters, but so complicated are the reactions of it with nutritive conditions that any inference from the mere size of the mass has little value. If the inference from brain-weight were applied thoroughly, mental superiority would reside with the tall as contrasted with the short men, since, as a rule, tall men have the heavier brains. Size, therefore, has a meaning of either more or larger structural elements, but it is by no means entitled to dominate the whole interpretation of the central system. There is little or nothing in the proportional weight relations of the female encephalon to show it different from that of the male. In reaction, however, the female has a more local responsiveness than the male, and back of all this is the matter of general physiology, which has its distinct modifications according to sex. Moreover, it is impossible to escape the conclusion that in women, natural education is completed only with maternity, which may fairly be laid under suspicion of causing more structural modifications than are at present recognized. Basing the inference on the size of the structural elements, we should infer that the typical central system in the female would be somewhat more easily fatigued, and also exhibit less complete organization. For the rest we have no anatomy, and only modes of reaction on which to base a judgment. These modes

seem in part to depend on fundamental physiological differences; in part, on the organization of the central system; and in part, on nurture. Just how far any variations in this last condition will modify reactions of women is at present a matter of experiment—an experiment in which the question of brain-weight has far less significance than was at one time thought.

Whatever power be chosen for consideration, the process of education must be much influenced by mental ripening. The child may be precocious or backward. It is interesting to note, apropos of what has been said concerning strength and size, that precocity is for the most part concerned with an early increase in the complexity rather than the strength of the reactions; it is a precocity of organization, not of size. Moreover, it is wont to appear along limited lines only. Physiologically, it is growth without the usual sensory provocation, and as such renders superfluous much of the formal training, the purpose of which is to stimulate. Hence the ease with which these individuals may learn some things. The best studies on the subject show that precocity and genius go together. The same conditions which gave the individual a generously planned nervous system also favor its early development. In such precocious persons it tends to grow for a longer period than usual, a feature which is fully as important as the precocity itself. It is extremely interesting to see how, among a series of eminent men, excluding men of action, the determination of distinction follows the order in which the brain normally attains the high development necessary to command recognition in a particular profession.

Table based on 287 cases analyzed by Professor James Sully	*Gave promise before 20 years of age*	*Produced before 30 years of age*	*Attained distinction before 40 years of age*
Musicians	95 per cent.	100 per cent.	100 per cent.
Artists	89 "	98 "	100 "
Scholars	83 "	71 "	90 "
Poets	75 "	92 "	92 "
Scientists	75 "	80 "	92 "
Novelists	75 "	56 "	80 "
Philosophers	67 "	56 "	60 "

Those professions demanding only small acquisition but a very perfect adjustment between one sense organ and one set of muscles, as between the hand and the ear, in the musician, and the eye and hand in the artist, are precocious throughout, while the philosophers, with their need for accumulated information and ripened judgment, bring up the rear. Similar investigations on slightly different material yield accordant results. The precocity which is marked normally in the formation of the structural elements, and the slowness with which they complete their organization and development, are features fundamental for the production of a good intelligence, for the first condition supplies the elements for response to the various stimuli from without, and the second prevents the formation of too rigid reactions before the frequent repetition of a stimulus has given assurance of its importance. From such facts, the general relations of formal education to the growing process are fairly evident. The function of it is to round out the original framework, in accordance with the natural provisions there present. Without question there is something very fatalistic in the limitations thus suggested. No amount of education will cause enlargement or organization where the rough materials, the cells, are wanting; and on the other hand, where these materials are present, they will in some degree become evident, whether purposely educated or not. Anatomically, the process of training leads to organization extending from the center first developed, so that regions which are isolated in infancy become later more closely associated. So, too, it is found that on the motor side the control of a limb from the cerebral cortex is earliest established over the limb as a whole, since the cells controlling the joints nearest the trunk are the first to mature. At the same time the cortical centers for the more proximal joints tend to be most thoroughly organized, and they become by virtue of this organization in some degree a thoroughfare for the impulses controlling the more distal groups of muscles. Thus the impulses tend to pass through the cortex, and down the limb in regular series. Seguin thus found it most advisable to begin the training of

an idiot hand with movements at the shoulder, and the later brain physiology as well as the history of growth confirms his method. The suggestion from this is that the exercise of those structures best formed will most readily arouse to activity those next to be developed, and that direct exercise should follow closely upon the natural extension of the growth processes. In any special case, it is hardly possible to predict what capabilities may be latent, and earlier education thus resolves itself into a reconnoissance among the nerve centers for the purpose of finding those which will best act together. By consequence the training for association comes first just as precocious growth first tends to take this form; that for precision and strength being deferred until later.

Since the beginning of the educational experiment at the dawn of civilization, the problem has been to rouse an interest in the formal exercises of the schools. From the physiological side that which rouses an interest tends to quicken the pulse and determine a full blood supply to the entire central system, yet the narrow gymnastics of the classroom in the most austere form do not in themselves produce that condition of good nutrition favoring the best diffusion of the impulses and the formation of secondary and subconscious associations. The problem, therefore, of an emotional background has been ever present. It has been met with a hickory stick and with gold, as well as everything between them that could be considered as a general excitant; but useful as all these methods sometimes are, it has in the main only been successfully met by a more subtle sympathy and knowledge; a sympathy which in one way or another discovered the growing point in the child and fitted the task to the necessities of the individual.

There remains still another aspect of the subject. The avowed aim of certain educational schemes is to produce a rounded, balanced individual as an outcome of the training process; a psychological result comparable with the ideal human form at one time sought in sculpture. Since conditions of life on the globe are not uniform, and since man only approaches the ideal in his development when in harmony with

his surroundings, the notion of such a universal ideal is as fanciful as that of the Urpflanze sought by Goethe: a sort of parent-stem which should contain the characters of its multiform descendants displayed with an ancestral simplicity worthy of the golden age of which it had formed a part. As a matter of fact, the education of an individual is a very local problem in its details. Certainly the weak points in the central system must be strengthened, that the abilities given by the strong ones may be guided by some sort of balanced judgment. But the balanced and judicial states are, so far as they go, plainly statical, and the vigor of a healthy restlessness is very necessary, if there is to be advance. While growth continues things bodily and mental are lop-sided, for growth is never general but accentuated, now here, now there. But this very unbalance, if only it be the outcome of natural endowment and not of formal training, gives a vigor not otherwise to be obtained. The history of the normal individual is through various phases of unstable equilibrium and awkward strength, to the poise and quiescence of late maturity, yet in any community examples of all these phases are found as terminal states in both old and young. The formal methods, therefore, which shall recognize in the presence of these enormous differences in endowment the dynamic value of the natural inequalities of growth, and utilize them, preferring a lack of roundness to the outline gained by pruning, will most closely follow that which takes place within the body, and thus prove most effective.

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II

DR. McCOSH AS A TEACHER OF PHILOSOPHY

To state correctly the elements which constitute the power of a great teacher is no easy task. Teaching in its highest form is a concrete spiritual function. It is easy to describe the method of Socrates, but who shall estimate the subtle play of spiritual forces that passed between the master and his pupils? One meets this difficulty in an aggravated form in attempting to estimate the power of such a man as Dr. McCosh. Some teachers, not the greatest I think, merge their personality in their work. They are like the dramatic poet, who retires behind the scenes while the characters he has created act out their parts. To men, however, of the Socratic type, men of intense and commanding personality, this kind of self-abnegation is impossible. Their words and works must take on something of the mold and glow of a personal force.

Dr. McCosh belonged distinctively to this type. No one could see him without recognizing his impressive and commanding presence. But those who enjoyed the privilege of closer intimacy were chiefly aware of another quality of his personality, namely, its provoking and stimulating character. Dr. McCosh's very presence was a challenge which drove away lethargy and indifference and put one upon his best mettle. It was a magnetic force, which either attracted or repelled the iron filings, but drew all within the circle of its spell. It is not my purpose here to analyze the personal force of Dr. McCosh, but simply to emphasize it as one of the important elements in his power as a teacher. I do not speak of him except as I knew him here in Princeton. He came to us in the zenith of his career, with his prestige as a ripe philosophical scholar; as an author who had achieved eminence, and as an educator of world-wide reputation. His reputation formed a back-

JAMES McCOSH, LL. D.

Ex-President of Princeton College, 1811-1894

ground for the impressive figure of the man himself, re-enforcing his efforts and placing the stamp of authority upon his words and works. When Dr. McCosh put his hand upon the college machinery, it is said that his power was felt instantaneously, like an electric shock. This rousing quality manifested itself, perhaps in its highest degree, in the lecture-room.

I have dwelt on Dr. McCosh's personality as a necessary preliminary, since, without taking it into account, no adequate conception could be formed of his power as a teacher. I will now describe briefly his classroom methods. In these the lecture held the central and most important place. Dr. McCosh's classroom was essentially a lecture-room. His example in this respect raised the lecture, as an academic function, to a position of dignity and importance which it had not before held at Princeton, or, as I am inclined to think, in any other American college. While not discarding the text-book in philosophy, Dr. McCosh relegated it to a subordinate place. It is only through the oral lecture, he thought, that the teacher can impart that stimulus and inspiration to the pupil that is the essential condition of all real instruction. In this conviction he never wavered. After he had published text-books on logic, psychology, and metaphysics, and his pupils had succeeded him in the work of the classroom, his consistent advice to them was not to trust exclusively to text-books or even to text-books with annotations, but to accompany the text-book instruction with courses of oral lectures outside of and supplementary to it. His faith in the lecture was amply vindicated by his own experience. Dr. McCosh possessed almost every quality of a great lecturer. First and foremost was the magnetic force of his personality. To this must be added a complete mastery of his materials, a fine logical power of analysis and arrangement, a keen and fresh habit of observation, which enriched his instruction with facts and illustrations, and an almost unequaled power of exposition. Dr. McCosh's lectures were carefully written out and were fine models of academic compositions. They were alike examples of "fine style and fine thinking." And they were delivered with a live

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interest and enthusiasm that never failed to be contagious. Dr. McCosh magnified his office as a lecturer, but there was about it little of the cold formality that sometimes surrounds this academic function. He aimed to reach and rouse his pupils, and his address, while noble and dignified, was incisive, direct, and marvelously simple and clear. In his hands I think it may safely be said that the lecture as an academic function reached the climax of its power. There may have been greater lecturers, but it has not been my privilege to know them; while in the effects of his teaching, in the interest and enthusiasm which his lectures stimulated throughout the college, the traditions of the old classic days of Athens seemed to have been revived.

Another feature of Dr. McCosh's method was the quiz or recitation. I do not think he was superlatively great as a quiz-master, although, on further reflection, I may find myself compelled to recant this opinion. His naturally vehement and impatient temper sometimes got the better of him on these occasions, and his manner of handling an intellectual prig or dunce was very often a better illustration of the *fortiter in re* than of the, to the teacher, equally indispensable *suaviter in modo*. I do not mean that Dr. McCosh was infirm of temper. On the contrary he seldom, if ever, lost his self-control. His ebullitions of anger were simply incidents of the urgent and searching way he had of probing a man and reaching out for what was best in him. Moreover, he was naturally intolerant of stupidity or haziness, and he could not endure generalities, however glittering, where specialties were required. The poor fellow who found himself like the five foolish virgins, without oil in his lamp at the moment of his extremity, and who essayed to conceal his ignorance under a mask of assumed knowledge, was sure to be brought to speedy repentance for his temerity. A quiz by Dr. McCosh was not always smooth sailing, and the student sometimes came out of the ordeal feeling that his intellectual rigging was very much in need of repairs. But ordinarily the course of events was not so tempestuous. B would be called upon, for example, to distin-

guish between the original and acquired elements in some visual experience, or to state the differences between natural realism and Berkeleyan idealism on some point of perception. Now B's ideas are perhaps a little hazy at the start, and his first essay is not remarkable for lucidity. But if he is making an honest effort he will be asked to mend his answer, and thus given a chance to collect his resources and redeem himself. It usually happened that when B sat down at the close of the exercise, provided he had a little wit and was capable of improving his opportunities, he had experienced a marvelous classification of ideas. Of one thing at least he felt sure; there was one subject upon which, if called on, he could express himself definitely and clearly. Dr. McCosh's defects as a quiz-master, so far as they existed, were mere faults of detail. In the large outcome of this feature of his teaching, he was successful to an eminent degree. There was no place for mental languor in his exercises, but his classroom presented a scene of animated interest. The master himself was alive and active and keenly interested in his work, and his spirit dominated the room. It was a dull fellow indeed who did not feel the stimulus of this atmosphere and respond to it in some degree. If the ability to overcome mental inertia, to wake up and stimulate the minds of his students, and to create an active interest on their part, in his subject, be the criterion of a great teacher, then Dr. McCosh was a great teacher in every sense of the word.

But Dr. McCosh's functions as a teacher of philosophy were not confined to the classroom. Aside from the service he rendered in his published writings, to which I can only allude here, there are several features of his college work that must be taken into consideration in any estimate of his power and success as a teacher. The first of these was his idea of *studium generale*, embracing all the branches of liberal culture, as constituting the essence of the university. Upon this as a basis he conceived and partially carried out a reorganization of college studies, grouping them into the three departments of science, literature, and philosophy. Dr. McCosh's ideal was that of a philosopher who had studied the educational prob-

lem profoundly, and who had the resources of a wide experience and a firm grasp of principles at his command. In his scheme of co-ordination his aim was to produce, not a dead mechanism, but a living organism. Science and literature were to lead up to philosophy, in which the final unity and completeness of culture were to be achieved. A second feature was the system of competitive fellowships and prizes which he founded, several of which were assigned to the department of philosophy. These fellowships and prizes were powerful stimulators of advanced study, and aroused great interest and enthusiasm among the better class of students. It was Dr. McCosh's aim in the founding of fellowships and prizes not only to encourage advanced attainments in philosophy and other departments of learning, but also to educate high-class teachers for college positions; and it is a remarkable justification of his prescience in this matter, that, to say nothing of other schools, more than a hundred college positions in this country have been filled by his pupils, and that at present Princeton's faculty contains twenty-four of his pupils as professors, instructors, and assistants. A third feature of the same character was the establishment of university courses and the founding of university fellowships and regular schemes of study leading to the higher degrees, in all of which Dr. McCosh took the leading part, although he was ably seconded by others. That Princeton should be a great university was the aim that inspired and directed all his efforts. Now, although his work in the direction I have mentioned belongs especially to his general administrative relation to the college, yet it cannot be overlooked in an estimate of him as a teacher. For Dr. McCosh's ambition was not only to make Princeton a great center of philosophical education, but also a source for the supply of teachers for other institutions. And aside from this ambition the things I have spoken of had a powerful retroactive influence on the individual students, opening up opportunities before them and arousing in them the desire for advanced attainments. The fellows and advanced students in the various departments will testify, moreover, to the warm

personal interest Dr. McCosh took in their studies and the stimulus and help they derived from his encouragement and direction. Advanced and independent study and research never had a truer or a more generous friend.

Another feature that stimulated interest in philosophy, as well as in other branches of learning, was the library meeting, as it was called. This was a unique feature of American college life and deserves a brief notice here. It was the custom of Dr. McCosh during his presidency of the college to hold a meeting each month, during the college year, in his library. To this would be invited the members of the faculty and the fellows of the college, together with the members of the junior and senior classes. The attendance ranged from fifty to about two hundred. At these meetings a paper prepared specially for the occasion, on some philosophical or kindred theme, would be read by some member of the college, or by an outsider who had achieved eminence in his specialty. The reading of the paper would be followed by a discussion in which all were free to participate. These meetings were as a rule animated and interesting, and not only formed an appropriate climax to the philosophical work of the college, but also served to arouse a general interest in that and kindred studies. No description can at all adequately represent the importance of these meetings. Visitors from other colleges who had the opportunity of being present at any of them were greatly impressed, and regarded them as among the most interesting features of Princeton college life. It is needless to say that Dr. McCosh was the inspiring genius of this as of the other elements of which I have spoken, and that the whole must be taken into account in estimating his power and work as a teacher of philosophy. When he retired from the presidency the library meeting passed into the hands of his successor, and has been perpetuated in a somewhat modified form. Dr. McCosh's retirement from the presidency of the college did not, however, carry with it the total relinquishment of the teaching function. He still continued to deliver courses of university lectures on various topics of interest, before the whole

college, and he was made president of the Philosophical Club, an organization formed about this time and comprising in its membership the instructors and fellows in several of the leading departments of academic study, a position which he held up to the time of his death. And although a very old man, in his eighty-fourth year, he continued to be the ruling spirit of the club, presiding at all its meetings, and working for its interests with untiring zeal. It was only last August that the writer had a letter from him full of plans for the future work of the club, and proposing several subjects which he wished to have discussed at its meetings. But the hand of death was on him before they could be realized.

How shall the power of such a man be estimated? Dr. McCosh was above all a teacher of men. And as a teacher he was pre-eminently a philosopher. I have spoken above of the inspiring force of his personality as a factor in his teaching. I have also considered in some detail the various agencies through which he made his force as a teacher felt. My aim in the remainder of this paper will be to show the connection of some of the larger features of Dr. McCosh's life and spirit with his power and success as a teacher. Dr. McCosh's philosophical activity was related vitally on one side to religion and theology and on the other to science. And it may be truly said that he illustrated the harmony of science and religion in his own person. A theologian to the manner born, and a minister of the Gospel years before he entered upon his academic work, he was naturally alive to the religious side of philosophical problems. But he was a keen lover of nature on the other hand, and had from the beginning of his career been alive to the great issues that were arising in science. Partly in consequence of this two-sided interest, and partly also owing to his largeness of vision and catholicity of spirit, when the doctrine of evolution became prominent in science and philosophy through the discoveries and writings of such men as Darwin, Huxley, and Spencer, he was prepared to deal with it wisely. Dr. McCosh, pronounced theist that he was and minister of the Gospel, did not join in the general chorus of opposition to

the new doctrine, but undertook to show that neither theism nor sound religion had anything to fear from it. As one has finely said: "Dr. McCosh believed in God, and he also believed that nothing could be evolved that God had not planned." He was thus able not only to save those who had accepted evolution on scientific grounds from atheism, but also to become the most intelligent critic of evolution. Again Dr. McCosh was a most pronounced intuitionist in philosophy, but this faith did not close his sympathies against any of the fresh results of investigation. On the contrary he was ever hospitable to research, having the abiding faith that the more thorough and exhaustive the analysis of experience should be, the more clearly would it vindicate the necessity of an intuitional foundation. In like spirit, when the new science of physiological psychology began to put forth its claims, Dr. McCosh was one of the first in this country to welcome it as an ally and important aid to the investigation of consciousness. These characteristics of Dr. McCosh indicate a largeness of vision and sympathy, combined with a firmness of faith, which exercised a more potent influence over his pupils generally than any or all of the special doctrines of his philosophy. It was less the teaching of the man than his largeness of mind, his spirit and conviction, that penetrated and molded the mind and character of his students.

And this suggests the topic which I wish to consider in this closing paragraph. What were the essentials of Dr. McCosh's influence upon his pupils? To answer intelligently, we must distinguish between the content of his teaching and his spirit and temper. As to the former there were certain fundamental convictions in which he generally carried his pupils with him. They might not accept all the details of his doctrine of natural realism, and certain aspects of idealism might possess more charms for them than the master liked, but they did not fail to agree with him in his love of reality and his belief that the real may be known. His firm faith in God was also likely to be theirs, as well as his conviction that morality and religion could be truly grounded only in an intuitional metaphysic.

Briefly, then, it may be said that while Dr. McCosh sometimes failed to carry conviction regarding certain points which he himself considered important, yet no teacher was ever more successful in reproducing in the minds of his pupils the main lineaments of his own belief.

Regarding the spirit and temper of Dr. McCosh's teaching I cannot speak in other than unqualified terms. If his very presence was a challenge to mental activity, it was also and pre-eminently a challenge to honesty and directness. His honesty and sincerity of belief and purpose were transparent. And these were something more than ethical qualities with him. They were properties of mind. Dr. McCosh was incapable of a mental indirection; his mind was absolutely lacking in those dual mental processes out of which irony, sarcasm, and innuendo arise. A spade was to him never anything else but a spade. His thoughts corresponded directly with the real, and his words faithfully and simply expressed his thoughts. Dr. McCosh had infinite tact and shrewdness in action, but he was as innocent as a child of verbal tact. He went straight to his mark like an arrow. This simple honesty and directness in the man enabled him to reach the heart of the pupil and to provoke in him a like spirit. It also gave the pupil absolute confidence in the master. For whether he agreed with him or not, he felt through and through that he was being honestly dealt with, and that the mind and heart of the master lay open before him. When to this we add that Dr. McCosh was a man of the purest and loftiest ideals; that he was a stranger to selfishness and paltry aims; that he never thought of sparing himself; that he was supremely devoted to truth as he knew it; that he labored singly for the good of his pupils whose interests he bore continually on his heart and mind, the enthusiasm which his pupils felt and continue to feel for him will, I think, be explained and justified. Dr. McCosh was a great man and he accomplished a great work for his day and generation. But he was greatest as a teacher, and among the many enduring memorials which bear witness to his achievements the most imperishable are those which have been wrought in

living tissue, in the minds and spirits of his pupils. His impressive and commanding presence is no more seen in our midst; his voice is forever silent on earth. But his works do follow him, and being dead he yet speaketh. For the example he has left and the words he has uttered only become the more impressive when the form of the teacher has vanished and there remains of him only a sacred and inspiring memory.

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RECOLLECTIONS OF DR. McCOSH'S TEACHING

It was as President of Princeton College that Dr. McCosh achieved the great success of his life, and left the deepest mark on his time. But for sixteen years he was professor of logic and metaphysics in Queen's College, Belfast, Ireland, and it was during this period that he won a recognized position in the philosophical controversies of his age, and also influenced large numbers of young men, many of whom now occupy places of trust in every part of the world. Even now, after the lapse of so many years, I can well remember the keen regret, the vivid sense of loss, which his departure to America caused in Belfast and the North of Ireland. It was he, along with men like Professor Craik and Sir Wyville Thomson, who had helped to make the college at Belfast so conspicuous, and had given it its splendid reputation throughout the British dominions.

Many of Dr. McCosh's old pupils will testify that he did more, perhaps, than any other of their teachers to mold their habits of thought, to give direction to their tastes and purposes, and to shape their after lives. It is natural to inquire what there was in him, and his methods as a teacher, to produce in young minds an impression so deep and lasting. I was a member of the last class which he taught in the college at Belfast, and perhaps my recollections of him in the classroom there may help to furnish at least a partial answer.

Dr. McCosh's personality never failed to impress young men. In all he did there was a suggestion of strength. His easy and thorough grasp of the subjects he taught was very apparent. He lived in them, and they filled him with enthusiasm. In listening to his philosophical lectures, one felt that this was a man who knew what he was talking about. His thought had a firm tread. He had clear opinions which he expressed clearly. His sentences, if not always graceful, were never hazy. His style was terse and masculine, and never tedious or dull. What he said once of Sir William Hamilton was just as true of himself, that no one who listened to his lectures in the classroom, or read his works, had any reason to fear "being led into a Scotch mist, or being met by a fog from the German ocean."

The natural result of all this was that Dr. McCosh always succeeded in interesting his students, even those of them who had least taste and aptitude for philosophical study. He did not aim simply at imparting his thoughts to them, he sought to stimulate them to make what he taught them their own. As I remember him in the classroom, he labored there as one who knew that "the true teacher, like nature, gives nothing but materials, and opportunities, and impulse." His pupils were roused, in spite of themselves, to the difficult work of thinking. They could not sit under him for a college session without having whatever powers they possessed, in some degree at least, called into play. This accounts, partially at any rate, for his deep and lasting influence on the habits and lives of his students.

The methods of teaching pursued by Dr. McCosh at Belfast were, as I recall them, thoroughly wise and well adapted to the miscellaneous material with which he had to deal. All young men who were being trained in Belfast for the Irish Presbyterian ministry were required, by the order of their Church, to attend the classes in metaphysics in Queen's College. Consequently, while the college left the subject an elective one, the professor of metaphysics had always a large body of students who presented, as might be expected, the

most varying aptitudes for the studies of his classroom. To teach philosophy to such classes, so that the brightest minds might be stimulated and the dullest not neglected, was a difficult thing. Dr. McCosh succeeded admirably. First of all, a text-book on the history of philosophy was used. The key to the present is the past. To understand the controversies of to-day, the student must watch the historical development of thought. By the use of a text-book Dr. McCosh opened to his pupils the various answers that had been given in successive ages to the problems with which philosophy deals. Twice a week he unfolded in a series of lectures his own answers to the same problems. By frequent recitations and occasional essays, he tested his students, to see whether they understood the points in which his own system of philosophy agreed with, and differed from, other systems. His teaching did not confine itself to the surface of things. He was not satisfied with the cut and dry knowledge which may be acquired from manuals. By the plans indicated, he sought to impart to his pupils "a living knowledge, a knowledge of which they should know the beginning, the middle, and the end." Perhaps what some of us who sat under him appreciate most as a result of his teaching is the respect he instilled into us for the Baconian method of investigation as the only one which will yield trustworthy conclusions. As a consequence of this we feel, and always will feel, a repugnance for all merely *a priori* theories, whether we find them in philosophy, or in theology, or in biblical criticism.

I can remember that in the classroom Dr. McCosh's temper was somewhat imperious. An ill-prepared recitation annoyed and irritated him. The student whose answers to questions were slow of coming, or wide of the mark, was made to feel for the moment rather uncomfortable. To be a member of any of Dr. McCosh's classes meant serious work. And yet his pupils, at least the most ambitious and laborious of them, loved their teacher. They could not but appreciate his intense sympathy with young men. He was most approachable, always kind to those who came to him for information, always

interested in those who were fighting with intellectual difficulties. He kept himself in touch with the men who made any mark in his classes. By personal talks with them, by close observation of their work, he became acquainted with their mental and moral equipment; and nothing gave him greater pleasure than to help such young men, after graduation, into positions in life for which he deemed them fitted. Some of us know that he would spare himself no trouble to that end. He followed the career of his successful students with the keenest interest, and if they accomplished anything in the literary or professional activities of life, a message was sure to come from him, to let them know the pride and delight their old professor took in the work they were doing.

No one whom I have ever known used his life more worthily than Dr. McCosh. No one deserves more to be held in grateful remembrance. He has been well described as "a fine specimen of the sturdy, religious, metaphysical Scot." It is the fashion in certain quarters to belittle his work in philosophy, but some at least of his writings are destined to live. There is a great deal of force in what a writer in a British paper says of him and his work: "Among the young metaphysicians Dr. McCosh is not greatly esteemed, but if their books have as long and as vigorous a lifetime as some of his, we shall be surprised."

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III

VALUES IN SECONDARY EDUCATION

The most weighty charge that can be brought against the Report of the Committee of Ten is that it is built upon the sands of an unscientific empiricism. The chairman recognizes this when he says the work can endure for only a few years, and is at best but a scaffolding. Dr. Harris emphatically declares this in his letter of transmittal, when he says: "The recommendations of this Report will draw the attention of great numbers of teachers to the question of educational values. . . In this respect I consider this the most important educational document ever published in this country." Mark the words "In this respect"; and to this end one may readily recognize that the mistakes in the Report may be far more serviceable than the lucky hits. Let us be thankful for the mistakes and lament that they are not yet found as numerous as the enemy had hoped.

This accusation of having built upon the sands Superintendent Kennedy of Batavia brought against the Committee in the last University Convocation of the State of New York. At the same meeting President Hall expressed his regret at the lack of educational theory in the Report, and Dr. Butler, while defending the work of the Committee, declares that this question of educational values is *the* crucial question in all grades of educational work.

I pass over in silence those passages in the Report which apparently declare that no such question exists, and that one subject has as much educational value as any other, and the remarks of that college president who ascribes as much educational value to road-making as to any other possible subject. It is enough that the two words, "educational values," have come to be the shibboleth at every meeting of educators, and ornament the programme of every educational meeting.

Under these circumstances I shall not be so rash as to attempt to draw a complete and accurate map of this vast and unknown land of educational values, nor shall I fill up its oppressive blankness with figures of lions and tigers, griffins and fabulous birds of prey. I dare only attempt to send a spy about its borders, well assured that he who brings back grapes of wondrous size will also tell of giants whose strength and stature may well intimidate the faint-hearted. It is the purpose then of this paper, first, to deduce as concisely as possible a principle of choice for the selection of studies which shall serve as a measure to determine educational values, and, second, to call attention to some of the pressing problems which demand solution before this measure can be applied to secondary work. The orthodox method would be to call upon ethics to furnish us with this fundamental principle or upon her sister theology to deduce it from her answer to the question, "What is the chief end of man?" But if we examine with some degree of care the educational thought of the present, especially that thought impelling to wide reforms, we shall find implicit everywhere a principle characteristic of the times, and one by no means lacking in ethical support.

Let me make that principle explicit.

As all are well aware, the measures for reform in secondary work are by no means confined to our own country. If we consider the decrees of 1890 and 1891, marking the reforms in the French Lycée under the leadership of Jules Simon, or the law of 1892 in Germany, brought about by the Berlin Conference, or the Report of our own Committee of Ten, or the demands for reform now being considered by the Royal Commission in England, two ideas seem to dominate them all: (1) better methods; (2) more attention to modern subjects.

The meaning of the first is more apparent when we find in every case coupled with it advances in physical culture, in hygiene, and in attempts to gain spontaneous activity from the pupil himself. The pupil is no longer in the eyes of the reformer a passive receptacle into which is to be poured knowledge perfectly ordered according to the laws of logic; first the

major premise, then the minor premise, then the conclusion; first the rule, then the exception; but he is himself the dominating activity, dominating not only the sequence of teaching, but the very choice of subject-matter itself. He is, or soon will be, and surely ought to be, the all-important factor in the choice of studies. The law of his development must be the law of choice and sequence for the teacher. One thing is plainly evident: the center of gravity of thought on education has shifted from the subject-matter of education to the subject of education, from the text-book to the pupil. Another thing is equally plain. Educators have breathed in that atmosphere so supreme in the scientific thought of the day; that unwavering confidence in the laws of nature as mightier than any device of human reason, that confidence which declares that man the best physician, who can give nature the best chance to help herself; that man the best scientist, who can closest follow Nature in her great laws; that man the true educator, who obeys most closely the eternal laws of man's development. We may set, then, as the first and most important factor of the principle of value, development, or the highest possible evolution of the individual.

The second factor in this principle makes itself manifest in the unprecedented growth of the modern secondary course of the French Lycée; in the rapid strides of the German Real-Gymnasium; in the manual-training schools, in the industrial and technical schools of our own country, and in the modification of the college requirements for admission. It is the demand for the useful, the practical, the near-at-hand. In its crass form it appeals to men of narrow views and low ideals of life. In its nobler form it counts among its standard-bearers no less names than those of Huxley and Spencer. The old dogma of formal education may well stagger under the vigorous blows of this young athlete. It is powerful since it contains a mint of truth. It is dangerous because it has only a part of the truth. It emphasizes knowledge as against feeling, the real as against the ideal. It magnifies the part as against the whole. It declares boldly that the end of life is adaptation to

environment, or, to put it in its bold, confident way, the mastery of environment. It takes for its text the words of the anthropologist when he declares: "After birth all further development is merely a concrete adaptation to environment without regard to upward zoölogical movement."[1] Of this second principle of reform, science is the watchword; environment, the argument.

The reform movement in education then presents two distinct phases: the one the development of the individual according to the law of his nature born within him; the other, environment. It is the old dualism of subject and object, ideal and real—may we not say the gold and silver sides of the same shield—and the truth is to be found in the synthesis of the two. The true principle of choice, the true end of education, is to be found in development as modified by environment; not environment in that narrow view which sees only sticks and stones, food and drink, money and clothing, but environment in that broader inspired sight of the poet when he sings to the little flower in the crannied wall:

> "If I could understand
> What you are, root and all, and all in all,
> I should know what God and man is."

And in the same vein, speaking of action, Goethe says: "For the narrow mind, whatever he attempts is still a trade; for the higher, an art; and the highest, in doing one thing, does all."

What, then, are we prepared to answer to the practical inquirers, who say:

"We are well aware of the dire need of a principle of choice. We have long since given up all hope that in the golden future a Comenius will arise who will so shorten science, and so lengthen life, that a single man in a single lifetime may master the world of knowledge. We are convinced that 'formal education,' so called, is a fiction, and that 'there exist as many kinds of formal education as there are essentially different spheres of intellectual employment,' that the elective system with its 'mob of studies' is absolutely no solution of

[1] Ellis, *Man and Woman*, p. 25.

the problem and merely begs the question; but we must have a principle of choice simple in its meaning and easy in its application; we wish to know what percentage of value algebra has, and English, and chemistry; physics and botany, and surely Latin, and perhaps Greek and physiography." To these I answer: Complete living is not so simple an affair that preparation for it should not involve complex ideas and complex relations; and second: The world was not made in a day, and the science of education is still very young. The only way of advance is by the slow, laborious way of observation and experiment. So the history of medicine, of chemistry, of every science teaches. The alchemist failed to turn the baser metals into gold, but chemistry to-day is turning them into what is far richer than gold. The elixir of life was never found, but it is the glory of medicine to-day that it has lengthened by a considerable amount the span of human life. The best that can be done by the science of education for the present, beyond making this principle of development as modified by environment the guiding word of general direction, is to point out where the labor must be done in observation and experiment. To some of the most important fields of this work I shall attempt to point.

First let me ask to what period of life secondary work belongs. "We are born twice," says Rousseau in the *Émile*: "once to exist, and again to live once as to species, and again with regard to sex." This wonderful phenomenon, by which a new life is grafted upon another until it absorbs the old, did not escape the attention of men of old or of uncivilized peoples. Its advent has been marked by many barbarous rites and ceremonies—the knocking-out of a front tooth, the tearing of hair from the head, tattooing and lacerating the body, fasting, seclusion. In Japan the godfather cuts off the forelock of the boy and gives him a new name, emblematic of the new life. The Romans celebrated it by the feast of the *liberalia*, and the boy donned the *toga virilis*. Aristotle, wisest of thinkers, most far-seeing of men, made this age the pivot of his curriculum, the dividing line for subject and method. In

recent times one of the most careful students of the brain and its functions has declared that the "distinction between reproductive and non-reproductive eras is no doubt the most important of all in the life of man"; and yet, echoing the words of the President of Harvard, there has gone broadcast through the land the saying that there is no line of division in the education of the child from the kindergarten to the college.

It is to the first four years in this period of adolescence, from fourteen to eighteen in the life of the child, that the work of the secondary school falls, a period characterized by unprecedented physical growth, by intellectual turmoil and confusion, by the flaming up of emotions not yet bridled by reason, but still plastic and yielding to sympathetic guidance; in short, the period of the birth of will, the birth of individual character. Pestalozzi, Preyer, Hall, have preached the gospel of the study of childhood, until the world has heeded and is bending in reverence at the feet of a little child; but who shall be the apostle of this second childhood through whose golden gates the child passes into manhood?

Before this idea of development as the principle of choice can be applied with any accuracy and precision there must be a physiology of adolescence, an anthropology of adolescence, and a psychology of adolescence. There must be innumerable observations and experiments within and without the classroom, and the careful statistician may delight his heart constructing thousands of those curves which apply to no one in particular and everyone in general. Adolescence must be studied not simply on its physical and intellectual, but on its emotional and volitional sides.

Everyone is familiar with the more marked physical changes that occur at this age. The larynx enlarges. The bridge of the nose grows out. The heart increases in size. In man the shoulders broaden, the muscles harden, and the beard begins to grow. In woman the hips enlarge, the limbs are rounded, and the bust developed. It is a period of rapid growth and of maximum resistance to disease. The head changes its shape somewhat, and to explain the enormous and rather

sudden leap in the mental life of this period, "we must assume," says one, "an almost completed apparatus lying ready to be brought into use, just as the centers of respiration are ready for their function at birth." The child only now begins to receive in its full the rich or vile inheritance handed down to him from his ancestry. If education and heredity can ever be pitted against each other, here is the place where they must meet.

Here, too, the sexes begin to differentiate to a marked degree. The period of change begins later in boys, lasts longer, and leaves more marked results in men than in women. In man the development is toward action, cognition, duty, and the higher imagination; in woman toward emotion, the protective instinct, a craving for admiration and worship, and faith in an ideal hero to be worshiped in return. The scientists are telling us now that women are nearer children than men, but they console the women by declaring that, after all, zoölogically the child is at the apex of development, and all subsequent change is really degeneration. But, to be earnest, the answer to the question how far co-education is right must find a large part of its data in the study of this period. It may be right to educate boys and girls together, but is it not rather summarily cutting the Gordian knot to say the curriculum for the one must be good in all its details for the other? Will a careful comparative study of adolescence in boys and girls admit of such a solution to the question?

On the intellectual side it is evident, too, that the old static psychology must be thrown aside. We must have a psychology of development.

The analysis of a plant into its parts, though involving the same truths, is quite a different thing from the explanation of the laws and method of its growth. So, too, in the mind we must have a psychology of the growth of mind; and the mind-growth of the youth is quite a different thing from the mind-growth of the child or of the man. What will this science have to say as to educational values?

But it is on the emotional side that this period of adoles-

cence shows the most marked and startling revelations; startling because in the educational practice of the day so little, so very little thought, is given to the training of the emotions, and yet this is the part *par excellence* which constitutes the individual as an individual. He may share his thoughts with other men, but his feelings are the holy of holies into which only his dearest friend may penetrate, and then only once a year. More than anything else, the feelings are the man. They mark themselves in the lines of the forehead, play queer tricks with the muscles of the eye and the corners of the mouth, express themselves in the carriage of the head and the placing of the foot, amalgamate themselves together into the disposition, which has more to do with a man's weal or woe and that of his neighbors than aught else that can be named. I would rather educate my child to invincible happiness than teach him all the wise thoughts the sages have pronounced or put in his hand all the wealth the bosom of the earth enfolds.

There is no period of life so tempestuous in the rise and sway of the emotions as the period of adolescence. The youth himself does not know or understand himself. He seems pressed and impelled by a mighty power from without The reins of a new life are flung into his hands, and alas! too often no one stands by to aid him guide his fiery chariot. This is the age of the beginning of lofty aspirations, of yearnings to sacrifice one's self for something noble and true. Altruism supplants the mild egoism of the earlier period. Right and wrong begin to look as they never looked before. The religious consciousness is awakened. As cited by Dr. Hall, out of 253 cases of conversion 138 occurred between the ages of 13 and 15.

Literature has not been silent as to the distinctive character of this period. Witness the following, most of which have been instanced by Dr. Burnham: Rousseau's *Confessions*, Marie Bashkirtseff's *Diary*, Jefferies' *The Story of my heart*, Tolstoi's *Confessions*, *The story of an African farm*, Longfellow's *Excelsior*, George Eliot's Maggie Tulliver, with her "wide, hopeless yearning for that something, whatever it was,

that was greatest and best on this earth," and her "volcanic upheavings of imprisoned passion." Of Gwendolen Harleth Clouston says: "From the time when at the gaming table Gwendolen caught Deronda's eye, and was totally swayed in feeling and action by the presence of a person of the opposite sex whom she had never seen before; playing not because she liked it or wished to win, but because he was looking on, all through the story till her marriage there is a perfect picture of female adolescence. The subjective egoism tending toward objective dualism, the resolute action from instinct, and the setting at defiance of calculation and reason, the want of any definite desire to marry, while all her conduct tended to promote proposals, the selfishness as regards her relations, even her mother, and the intense craving to be admired are all true to nature."

And now I ask: Is the present curriculum in secondary schools especially adapted to rule and guide these emotions? Is it even founded on a consideration and knowledge of the laws and facts of this wonderful course of nature? or is it not rather excellently fitted to ignore, to repress, to grind under the iron wheel of a cold intellectualism and a deadening mechanism? Modern psychology tells us that the emotions are the fundamental support of the mental activity and that, uncontrolled, they burn out the tissues of the life. "The grand pedagogical aim," says a recent writer, "should be to utilize the tempestuous emotions of adolescence." Are the secondary schools of to-day doing this? If so, where? Only here and there, and then rather by accident than by any fixed purpose. Surely the data resulting from the study of the emotions of adolescence will have something to say as to educational values when the principle of development as modified by environment is applied.

So I might go on to show how the volitional activity of youth yearns to express itself, longs to be something, to do something, to create something. If the whole boy is to be sent to school, it must be the boy doing, as well as the boy thinking and feeling. Froebel did a great service for little

children when he proclaimed the educative power of self-activity; but the adolescent must have activity or he will die, intellectually and morally, if not physically. Nor must it be simply the activity of the child. That is imitative, responds readily to suggestion from without, yields easily to environment; but the adolescent boy resists. He has found his heritage of an *ego*, and you must yield him an opportunity to externalize it. The fact that all the diseases characteristic of adolescence are diseases of excess declares this pressure of inner energy. The awkward, gawky bearing of the boy just crossing the threshold of the new life makes plain to even the most careless observer that there is more feeling, more energy than there is power to co-ordinate; and the power to co-ordinate, be it physical or mental, can only be gained by action. Action is salvation. A school without a playground, without a laboratory, without a workshop, without a debating society, without incentives to individual investigation and independent work, surely can find no place if educational values are truly apprized. The famous work for the world done by young men has often attracted the attention of the thoughtful observer. It would be interesting to note in how many instances the bent for this success was given during the early years of adolescence, when the habits of manhood are first traced in the plastic and forming character.

What has been said has had to do only with the side of development in the principle of value here set forth. It is evident that, upon the side of environment, there opens a long and fruitful series of problems, equally pressing for solution. Under environment are included all those conditions and influences from without which form the surroundings of life; the facts of nature and the concepts under which man has given them orderly arrangement; the great truths which have been discovered about life in the past, and the words in which they have been expressed; the relations into which man is brought with individual man and with society, and the ideals of those relations, the æsthetics of nature and of art; the moral law and man's relation to God; to all of which the

history of what man has done in the past forms the proper propædeutics.

It is the business of education to analyze this, to sift the essential from the non-essential, and to arrange it, not according to the laws of logic as the other sciences do, but according to the laws of the growth of mind and the development of the child. It is only as the child absorbs this environment that the development of the inborn powers is possible, for manifestly there can be no purely formal development. Knowledge must always be the knowledge of something definite. The power to do must always be the power to do something definite. Feeling can only exist as it is the atmosphere enveloping such definite knowledge and activity; and so our problem becomes a very concrete one, and we are in great danger either of merely seeking for a hierarchy of studies without regard to the boy to be developed, or being content with a low standard and calling it utility, or worse yet, in despair accepting without question a merely historical solution. If an analysis of environment on these principles is made, the Herbartians with their apperception, co-ordination, and correlation have made it very certain that the present hard and fast lines of the sciences are not fixed by any law of the Medes and Persians found recorded in the Book of Pedagogy. It is not at all improbable that before we attain those final per cents. of value so much desired, there will be need to resort to an entirely new principle of division, and that algebra will be strangely mixed with geometry, and bits of manual training find places exactly to fit in the mosaic of the classics; that the courses of study will be labeled with strange names, or old names in new meanings, and many, if not all, be as vague in outline as English is to-day. Nay, more, it would not be so strange a thing, after all, to find that the per cents. of value belonged to the bits rather than to the groups.

It is the business of educational theory further to determine what parts or views of this environment are essential to youth in the early years of adolescence; not simply in the light of what has been, with its climax of examination papers, nor yet

simply in the light of divine wisdom shed by college requirements, set often by men who have never so much as dreamed of many of the far-reaching problems peculiar to secondary education; but by the laws and demands of the youth himself. The college must come to the secondary school, not the secondary school to the college. Whatever may be said of educational reforms in general, this is a reform which must work from below upward; no matter who first dropped the seed for its growth.

Statistics thus far gathered make it plain that races differ somewhat in the rate and details of their development; but the much more pronounced difference in environment makes a decided and emphatic variation in estimates of value and order of procedure. Our own country, with its mongrel race and elastic social relation, presents a peculiarly difficult and yet a peculiarly promising problem for solution. Other people may have to deal with the comparatively simple problem of educating the boy to fill the place of the father, but we must face the problem of fitting the boy for an undetermined place in life; and we have this advantage that we are compelled, as no other people have been, to study the boy himself. Thus as the difficulty increases, the only true solution forces itself upon us. No education can be a true education that is not a national education. As long as any community has traditions to be held dear, ideals to be cherished, gods to be worshiped, which it holds dearer and truer than those of its neighbors, the true education for the youth of that community must be colored by these traditions and these ideals. There never can be one perfect education exactly fitted to all, until all men live in one land, a land where there is no scenery save monotonous sameness; until the division of labor has been given up, and every man makes his own coat, grinds his own grain, and bakes his own bread; until all men have become exactly alike, *pares similesque.* God grant that that may never be, and that we may cease so blindly to chase the *ignis fatuus* of unity, forgetting that the highest perfection is unity as manifested in multiplicity and variety. Amid all the din is unity!

unity! unity! it is a pleasing sound to hear Dr. Thurber emphatically declare: "The one unthinkable thing in our education is uniformity in schools and courses."

Let me emphasize especially one corollary which follows necessarily from the principle of development as modified by environment. Educational value is not a quality which belongs inherently to any study. It is only as it fits the time, the place, and the child, that such value belongs to it. The curriculum must be always changing, always made anew. Each people must have its own characteristic studies, its own characteristic estimate of value. As long as we wish to be Americans, and not Englishmen or Frenchmen or Germans, we must not seek to borrow the measures of value set in England or France or Germany; and again, the curriculum of to-day must not be simply the curriculum of forty years ago, *plus* all that the new environment demands. We must learn with composure to throw out the old which has lost value by the change in the times, as well as to take in what the present requires. The problem of educational values is then a perennial one, but one whose principles are definite and fixed.

We are all familiar with the story of Hiero of Syracuse and Simonides. How, when Hiero once asked the poet a question, he begged a day for deliberation, but at the end of that day begged for two more, and at the end of two days promised an answer after four, until Hiero, wondering at this geometrical increase, asked the reason, and Simonides replied that the more he considered the question the more difficult it seemed. If by reason of this article anyone feels that the question of educational values is more intricate, more pressing, more important than he felt before, then its purpose has been fulfilled. It is certain that giants dwell in the land, against whom brave battle must be given by him who would go up and possess it; but it is a land "where there is gold, and the gold of that land is good."

WALTER BALLOU JACOBS

BROWN UNIVERSITY,
PROVIDENCE, R. I.

IV

UNIFORM STANDARDS IN COLLEGE PREPARATION

An important movement toward co-operation between the East and the West, in the matter of uniform standards in college preparation, was inaugurated at the conference of the Michigan Schoolmasters' Club with a committee of the Faculty of the University of Michigan, held on December 1, 1894. The question of the unification of requirements for admission to American colleges was discussed by four representatives of secondary schools, twelve college presidents (by letter), and eight heads of departments in the University of Michigan.

As a broad basis for the discussion, the following questions were sent to 140 academies and 140 large high schools carefully chosen, and to 60 small high schools on the accredited list of the University of Michigan.

1. What positive requirements in science do you advocate? How much of each?

2. Would you favor one year of either physics, chemistry, or biology with laboratory work in A. B. and Ph. B. courses, and physics with either chemistry or biology in all other courses?

3. (*a*) Have you facilities for satisfactory laboratory work in the three sciences? (*b*) Could you easily secure these facilities?

4. Do you favor reducing the requirements in Vergil to six books of the Æneid?

5. (*a*) Would you limit the Greek preparation to two years and to Attic prose? (*b*) Can two or three books of Homer and the usual Attic prose be taught in two years?

6. Do you favor four years of a foreign language, preferably Latin, in all courses?

7. (*a*) Do you favor one or two modern foreign languages in the A. B. course? (*b*) How much?

8. (*a*) How much history would you recommend in the different courses? (*b*) Should the history of Greece and Rome be taken as a substitute for general history?

9. Do you favor solid geometry in all courses?

10. Which college is nearest your ideal in its requirements for admission? What changes would you make?

11. (*a*) Do you favor fifteen prepared and five unprepared lessons per week for all secondary schools? (*b*) What is your present system?

The answers to these questions from 36 academies (A), 18 of which were east of Ohio; 35 large high schools (B), of which 16 were east of Ohio; and 14 small high schools (C), accredited schools of the University of Michigan, showed the following results:

	A	*B*	*C*	*Total*
Question 1				
Physics,	19	29	10	58
Chemistry,	14	24	7	45
Botany,	5	11	6	22
Biology,	2	11	4	17
Physiology,	8	9	7	24
Zoölogy,	1	5	1	7
Physiography,	3	4	4	11
Geology,	1	1	2	4
Years of science for A.B. and Ph.B.,	1.2	1.3	—	1.3 (average)
Years of science for other courses,	1.8	2.6	—	2.2 (average)
Question 2				
Yes,	15	12	14	41
Question 3 (*a*)				
Physics, chemistry, and biology,	10	16	5	31
Physics and chemistry,	11	9	7	27
Chemistry,	1	3	0	3
Physics,	0	4	0	4
No Science,	2	3	2	7
Question 3 (*b*)				
Yes,	8	9	4	21
No,	7	3	3	13
Question 4				
Yes,	21	25	10	56
No,	5	7	2	14
Question 5 (*a*)				
Yes,	16	11	9	35
No,	16	19	2	37
Question 5 (*b*)				
Yes,	6	5	4	15
No,	21	24	7	52
Question 6				
Yes,	16	14	2	32
No,	11	14	10	35

XUM

	A	*B*	*C*	*Total*
Question 7 (a)				
Yes,	27	21	9	57
No,	1	7	3	11
Question 7 (b)				
One year,	5	8	2	15
Two years,	10	12	8	30
Question 8 (a)				
Years of history,	1.6	1.7	1.8	1.7
Question 8 (b)				
Yes,	7	6	2	15
No,	13	10	7	30
Question 9				
Yes,	13	12	12	37
No,	16	18	1	35
Question 10				
Harvard,	8	13	1	22
Michigan,	1	4	2	7
Cornell,	2	2	0	4
Chicago,	1	1	0	2
Princeton,	2	0	0	2
Stanford,	0	2	0	2
California,	0	1	0	1
Johns Hopkins,	1	0	0	1
Yale,	0	1	0	1
Question 11 (a)				
Yes,	9	11	3	23
No,	13	8	4	25
Question 11 (b)				
Average prepared lessons,	16.9	15.9	17	16.6
Proportion using any unprepared lessons,	.48	.65	—	.57

Some of the most valuable and representative reports received are here summmarized.

VIEWS OF LARGE HIGH SCHOOLS

PRINCIPAL F. L. BLISS, - - - - - - - - DETROIT

A general agreement among colleges is demanded, recognizing that A. B. and Ph. B. courses must have one preparation and scientific and technical courses another. Opinions of prominent schoolmen were quoted, showing the present low requirements of technical schools and their disastrous effects on secondary education. The first step toward unification must be the strengthening of the requirements for scientific and technical schools. Enough of mathematics, science, history, modern languages, etc., should be

added to these courses to make requirements quantitatively and qualitatively equivalent to those of the academic course. It was suggested that the few colleges requiring solid geometry for all courses join the large majority and drop solid geometry from the A. B. course, and keep it in technical courses, and possibly add plane trigonometry to the latter. This would give more time for plane geometry and help in two ways toward equalizing requirements. About one and a half years of science was favored for A. B. and Ph. B. courses, and two and a half to three years for technical courses. Laboratory preparation was recommended, and something like the Harvard option between two sciences without laboratory work, or one with it, was favored. Two to three years were recommended for history, except in A. B. and Ph. B. courses, in which one year would suffice. It was urged that the English requirements outlined by the Philadelphia conference be generally adopted, but advised that in all, except classical preparation, more English literature and historical grammar be demanded. Four years' work in foreign language, two years in each of two languages, was advised for technical courses. The University of Michigan was urged to increase the Greek requirements in harmony with those of other colleges. The Vergil requirement should be limited to six books of the Æneid. The Harvard "qualitative" requirements in Latin and Greek were favored by a large majority of prominent high-school men, and their general adoption was urged. It was urged that a modification of the general Harvard system be adopted, with high requirements for technical courses. The college which honestly desires unity will drop idiosyncracies, which tend to isolate the college and drive away the best class of students.

VIEWS OF ACADEMIES

PRINCIPAL W. H. BUTTS, - - - - - - ORCHARD LAKE

The percentage of replies received from different sections may indicate greater or less advancement in educational aims and methods, or it may show where there is the most pressing demand for change. In Delaware, New Hampshire, Vermont, and Oregon all responded and expressed great interest in uniting all sections in a system which should render secondary instruction more uniform, less expensive, and more effective in preparing for college and for life. In Michigan 75 per cent. responded; in Ohio and Pennsylvania 70 per cent.; in Connecticut, Kansas, Massachusetts, Mississippi, and New Jersey, 50 per cent.; in Illinois, Indiana, New York, Texas, and Virginia, 30 per cent.; and in Missouri, 20 per cent. None of the great preparatory schools, East or West, failed to respond. The apparent lack of interest in the South and in some parts of the West is due largely to the fact that academies do not flourish there as in New England, owing to the system of State universities and graded schools fostered by State grants and special privileges. State control and supervision, modeled on the Michigan plan, have created educational systems in a large part of the United States, more complete in many ways and more closely articulated than those of Germany. The victories won and the lessons learned only prepare the way for national unity and uniformity. The report of the Committee of Ten is the first constitution of educational America. The Colonial days have passed away. We need now close union and wise legislation.

XUM

In response to the first question, 39 per cent. of all answers favored one year of physics for all courses, 17 per cent. favored chemistry, 6 per cent. botany, 3 per cent. geology, 3 per cent. physiography. Physics and chemistry were favored by 16 per cent., physics and physiology by 6 per cent., physics or chemistry by 3 per cent., physics for the A. B. course, with chemistry added in other courses, by 3 per cent. Of all answers 40 per cent. favored physics, chemistry, or biology, with laboratory work in the science chosen, for the A. B. and Ph. B. courses, and physics with another laboratory science in all other courses. The East and the West could unite on this basis, thus enabling small schools, as well as large, to do good work in at least one science, and send men to college with good laboratory methods and a maximum amount of useful knowledge. In regard to satisfactory laboratory facilities, 33 per cent. answered "no" without qualification, 30 per cent. had facilities in three sciences, 33 per cent. in only two, and 3 per cent. in only one. Thus 63 per cent. now teach two laboratory sciences. Of those who did not have facilities, 53 per cent. could easily obtain them.

In the Latin requirement 81 per cent. favored reducing Vergil to six books of the Æneid. The Georgics and Bucolics were generally condemned. In Greek, 44 per cent. would reduce the requirement to two years and to Attic prose, 47 per cent. favored three years with Homer, 3 per cent. two years with Homer, 3 per cent. three years without Homer, and 3 per cent. would require no Greek. The teaching of Homer with Attic prose in two years was opposed by 81 per cent. Four years of a foreign language, preferably Latin, in all courses, was favored by 52 per cent., four years of a modern language by 17 per cent., four years of any foreign language was opposed by 32 per cent. One-fourth of those opposed favored two years of Latin in all courses. For the A. B. course, 57 per cent. favored one or two years of one modern language, 39 per cent. preferred two languages for the same time, 4 per cent. objected to any for the A. B. course.

For history requirements, 39 per cent. favored two years' work in American, English, Grecian, and Roman history for all courses, 39 per cent. would require about one and one-half years of American, Grecian, and Roman history for the A. B. course, and the same amount of American, English, and epochs of general history in all other courses. General history was opposed by many as difficult and unprofitable. Solid geometry in all courses was opposed by 55 per cent., all the leading preparatory schools in the East, with two exceptions, voting in the negative. In the central and Western States the large majority were favorable.

A majority of all answers considered Harvard nearest the ideal in requirements for admission, and favored common elementary requirements, East and West, with advanced requirements sufficiently numerous in each university to allow individuality among secondary schools and higher institutions. The majority of the responses considered preparation for college the same as for life.

UNIFORM STANDARDS AS VIEWED BY THE COLLEGES

PRESIDENT ELIOT, - - - - - - HARVARD UNIVERSITY

In the first place it seems to me that the most hopeful method is to adopt as a temporary outline of desirable groups of studies for secondary

schools, the four programmes recommended by the Committee of Ten. These programmes may serve a useful purpose for perhaps ten years. As soon as the elementary schools are substantially improved in accordance with the recommendations of the conferences, it will be possible to improve greatly the Committee's programmes for secondary schools; but for temporary use they may be said to afford the best general guidance now accessible.

Secondly, I think that colleges and scientific schools should, if possible, be induced to accept any one of these four years' courses of study as qualifying satisfactorily for admission to corresponding courses in the colleges and scientific schools, and furthermore to raise, gradually and with adequate notice, their own standards of admission to the level of these programmes, subject by subject.

Thirdly, the practicable mode of doing this seems to me to be as follows: Let a group, the larger the better, of American universities maintain admission examinations in all the subjects which enter into those four programmes; let every institution belonging to the group, and as many other institutions as can be brought to act with them, declare each for itself how many and what examinations it will absolutely require for admission, and how many and what choices among the remaining subjects it will permit; taking care, however, not to demand more, in the sum of prescribed and optional subjects, than the total represented in any one of the four programmes of the Committee of Ten. Each university or college might make its own arrangements as to the use it would make of the complete set of examinations; but all would maintain the same standard in each subject, and would permit any and every subject in the list to count toward admission in some way or other. By means of large options, taken from a uniform and ample list of studies, the individuality of different schools and of different colleges can be preserved.

The requirements for admission to Harvard College may perhaps indicate the manner in which options can be used. Certain elementary subjects are absolutely required for admission, and then wide choice is given among several advanced subjects. For national purposes a selection of both prescribed and optional subjects wiser than the Harvard selection might be made; but the general plan offers a good type, because it permits a tolerable range of choice. The programmes of the Committee of Ten of course suggest that the range of choice should be made wide; the prescribed subjects and parts of subjects being limited to those which are common to all four programmes, and a considerable addition being made to the number of the optional advanced subjects.

At Harvard we are satisfied that a great deal is gained for language instruction in secondary schools by making reading at sight a more important part of the admission examination than acquaintance with certain specified texts. The reading of prescribed quantities of Latin, Greek, French, or German should, in my opinion, play a subordinate part.

It is true that the substitutes for Greek which are permitted in the Harvard requirements for admission are more difficult than the Greek, and take more of the pupil's time. This was intentional with the Harvard Faculty. The result has been, as I pointed out in my report for 1891-92, that the persons who have thus far entered Harvard College without Greek

have made records in college which are distinctly above the average, and have proved conclusively that they are abundantly able to profit by college life, and win a standing which on the average is above those who entered with Greek. I believe that accepted substitutes for traditional subjects should never be made easier than the traditional subjects. That is not the way to win respect for the new subjects, or to prove their equivalence to the old subjects. Great care should be taken when history, the modern languages, sciences, and English are accepted for admission to college, that the requirements in these subjects should be unquestionably equal in quality and quantity to the requirements in Latin, Greek, and mathematics. Thus, the requirements in English, taught four years as proposed by the Committee of Ten, should be as serious as those in Latin, taught four years in the same programmes. We should not aim to open easy ways into the colleges and scientific schools, but we should try to open various new roads, all of which require as much energy and judgment to travel them successfully as the old roads require.

I may add that the Harvard requirements in physics, which have been in use for the last eight years, have worked admirably and certainly point the way to a satisfactory solution of all questions about requirements in the sciences.

PROFESSOR BUTLER, - - - - - - COLUMBIA COLLEGE

1. I favor a requirement in laboratory physics, on the ground that this subject can be most readily taught and most readily tested. It also involves training in accurate measurement, which is one of the chief benefits of scientific teaching at that age. I should, however, allow alternatives, say chemistry, zoölogy, or botany, in order that schools having varied equipment and various local needs to meet might be under no disadvantage in preparing students.

2. I would require a minimum of one year of physics, chemistry, or biology, including laboratory work, in all college courses of whatever character.

4. I favor abolishing the present requirements in Latin entirely, and substituting therefor an ability to read at sight easy Latin prose. The ability that I have in mind ought to be gained by the average pupil with three years of good teaching.

5. I would limit the Greek preparation to the ability to read at sight easy Attic prose. Such ability could be gained in two years. As to the second part of this question, I beg to say that I understand, on the best authority, that the three books of Homer and the easy Attic prose are in very many cases taught in two years at present.

6. I do not believe in requiring four years in any foreign language in all college courses, or in any college course. Ample provision should be made for instruction in Latin, Greek, French, and German, and opportunity given to the student to select freely among them.

7. All candidates for the degree of A. B. should be able to read readily French and German. One of these can be required for admission and the other taught in college.

8 and 9. I would make the study of history and solid geometry in college an elective matter entirely.

10. The requirements for admission to Harvard College are the ones that, in my judgment, best preserve the proper relations between the several subjects; that are best adapted to test the real ability of the candidate; and that are best calculated to assist in improving the work of the secondary schools. These requirements, however, seem to me to fail in that they postpone to too late a date, by nearly one year, the age of admission to college. If I had the power, I should alter them in two respects: First, by decreasing in difficulty the alternative now offered for Greek, which seems to me unduly severe; second, by reducing the quantity of work required, so as to permit students to enter college a year earlier than now.

11. Secondary schools can easily carry more work than fifteen prepared and five unprepared lessons per week. The total of number lessons prepared and unprepared should not be less than twenty-five.

PRESIDENT SCHURMAN, - - - - CORNELL UNIVERSITY

I am very much interested in the unification of the requirements for admission to American universities, and have recently pointed out that this is the next question which American educators will have to face; and I think it should be accomplished by a committee representing the colleges and schools, as was the case with the Committee of Ten.

1. I am not yet convinced that science should be required for admission to colleges and universities. We understand pretty well how to teach foreign languages and mathematics to school pupils; but we are still experimenting with the art of teaching science, as with some other things, notably our own language. I incline to the opinion that, if a science is required, the choice should not be restricted to physics or chemistry, but that botany, entomology, and vertebrate zoölogy should have a chance also. In any event, not more than one year's work should be demanded; that is to say, the work covered in a school year by two or three meetings a week.

2. I am in favor of one year of some science, with laboratory work, in A. B. and Ph. B. courses. No doubt, the B. S. course should require more science; but I doubt whether the student who is specializing in natural history should be required to take physics, as it would be of no use in his later scientific studies.

5. Were it not that boys are delighted with Homer, I should certainly favor the limitation to Attic prose. I know exceptionally bright students, by working hard, can cover the field both of Attic prose and Homer; but I fear it is too much for the average student.

6 and 7. I think that, in the A. B. course, one ancient classical language and one modern language other than English should be required for at least two years; and, while I should be willing to prescribe this study for three years even, I should hesitate to say four. I would not, however, prescribe Latin or Greek in any other courses than the humanistic courses (A. B. and Ph. B.). I think that, in the scientific courses, while Latin might profitably be required for admission on account of its value for linguistic training, it ought not to be required after entrance, when all the time that can be spared for languages should be given to French and German. I am in favor of one modern language in the A. B. course, but, instead of requiring a second

modern foreign language, I should much prefer the second ancient language. That is to say, my ideal is, as a minimum, one ancient language and one modern language; but, if the course will stand it, I would add a second ancient language. All these languages should be pursued two years at least.

8. I do not see how history can be prescribed in any courses except the humanistic courses, and, if Greek and Latin are both required in the A. B. course, I should not prescribe history, but offer it as an elective. The reason why I am in favor of making one of the two ancient classical languages an elective is in order to find time for the study of history, economics, etc.

9. I do not favor solid geometry in any course whatever, except where it is needed for subsequent work. The formal training derived from mathematical study is soon obtained. After Abraham Lincoln had gone over one or two books of Euclid by himself he said: "Now I know what demonstrative reasoning is"; and if other pupils do not make this discovery so early, I doubt very much if they need more than a year or two of work to reach it. This principle of the *using* of each study for subsequent studies, seems to me to furnish a criterion for determining the amount of mathematics which should be required in the respective courses. In the humanistic courses (A. B. and Ph. B.), I do not believe solid geometry should be prescribed.

12. I am inclined to think that the two foreign languages course, both modern, recommended by the Committee of Ten, is a mistake, except for students who are entering scientific schools. I think, as a preparation for life, that Latin should be required and only one modern language, if even that. Latin one can justify for its value as a linguistic training, but a modern language has little or no value unless it is to be used, and very few persons taking such a course would, I presume, ever need the French or German afterward.

PRESIDENT HARPER, - - - - - UNIVERSITY OF CHICAGO

President Harper would require at least one year of laboratory physics in all courses, would reduce Vergil to six books of the Æneid, but would not limit Greek to two years and to Attic prose. He would require solid geometry, American and general history in all courses, and a reading knowledge of two modern languages in the A. B. course. He thinks it advisable and practicable to form in the West an association which shall have for its purpose the securing of uniform admission to all colleges.

PRESIDENT PATTON, - - - - - COLLEGE OF NEW JERSEY

President Patton would limit Vergil to six books, if other authors are read, would prefer three years' preparation in Greek and require two modern languages for the A. B. course. He favors solid geometry for all courses.

PRESIDENT JORDAN, - - - - - STANFORD UNIVERSITY

Requirements are alike for all courses at Stanford University. President Jordan makes no requirement in any particular subject, except English composition, but accepts no work in any subject unless he can build upon it. He would leave the choice of sciences to individual tastes and needs, but would accept no science work except done in the laboratory for at least one

year. Credit is given in Latin, but not for less than two years' work. Particular books and authors are not essential. Solid geometry is favored for most students, and any *real* history is preferable to general history.

President Jordan believes the Stanford system the only permanent and tenable one, and says that nothing would induce the Faculty to change it.

PRESIDENT BAKER, - - - - UNIVERSITY OF COLORADO

President Baker favors one year of physics for the A. B. course, with the addition of chemistry and biology, one year each, for the B. S. and Ph. B. courses. He would reduce Vergil to six books of the Æneid and limit Greek to two years and to Attic prose. He would not require solid geometry for all courses, or allow the history of Greece and Rome as a substitute for general history.

PRESIDENT ADAMS, - - - - UNIVERSITY OF WISCONSIN

President Adams states that the scheme of the Committee of Ten is not yet workable in Wisconsin, as its adoption would throw out some things to which the schools of the State are wedded. He is not so much interested in having uniformity of requirements of admission to the American universities, as in having the standards advanced along certain lines in Wisconsin, so as to give to the University course greater symmetry and efficiency. Instruction in science is much better than in history or in the languages owing to the prevalence of the disease in favor of the so-called practical studies. Most of the secondary schools have laboratories for teaching physics, as well as chemistry and physiology. Instruction in German is very poor generally in the schools, and less than one-half of the high schools have a good two years' course in Greek. He favors four years of a foreign language, but considers the requirement entirely impracticable. He does not consider it practicable, at present, to get either modern language in addition to Latin and Greek for the A. B. course. His ideal university would not teach any beginning classes in foreign languages. He would go as close as possible to the recommendations of the conference report of the Committee of Ten, in teaching history. He states that solid geometry is required for admission to all courses in the university, but expresses no opinion as to the wisdom of this requirement.

PRESIDENT JESSE, - - - - UNIVERSITY OF MISSOURI

President Jesse favors reducing Vergil to six books of the Æneid. The Eclogues are of little value, and the Georgics are too difficult for the high school. He has little faith in general history in the high school, and would accept as a substitute the history of any of the great nations. He favors fifteen prepared and five unprepared lessons per week as a rule, but not as an inflexible one. He has little faith in scientific work, unless done with laboratory methods, and he would wholly exclude teaching by lectures.

ACTING-PRESIDENT IRVINE, - - - WELLESLEY COLLEGE

Mrs. Irvine states that Wellesley has adopted the recommendations of the commission of the N. E. Colleges in literature, English, and modern

languages, and is admitting students with and without Greek, permitting a science to be offered in place of a third language. The college policy is in favor of uniformity in so far as it tends to raise standards. Uniformity is to be recommended to the point of acceptance by some colleges of all, by others of some, of the programmes of Table IV. Colleges of higher rank might accept the first two programmes, others of lower rank might profitably accept all four.

PRESIDENT SEELYE, - - - - - - - SMITH COLLEGE

The most successful method of securing unity and uniformity is to form associations like the New England Association, where all subjects of mutual interest can be freely discussed. It has been the policy of Smith College to accept, as far as it could consistently, the recommendations of the association.

Out of these elaborate and carefully prepared opinions it will now be possible to extract a few specific questions for careful investigation. The Associations of Colleges and Preparatory Schools in New England, in the Middle States, and (yet to be formed) in the Northwest, should co-operate in pressing these problems to a solution.

Three members of the Schoolmasters' Club were chosen to join President Angell of Michigan, President Harper of Chicago, President Adams of Wisconsin, and President Rogers of Northwestern University, in a call for a meeting of an Association of the Colleges and Secondary Schools of the North Central States, at Ann Arbor, March 19, 1895. President Boone of the State Normal School, Principal Butts of Michigan Military Academy, and Principal Greeson of Grand Rapids, were elected to represent secondary schools in making this call.

WILLIAM H. BUTTS

ORCHARD LAKE, MICH.

V

THE RELIGIOUS ISSUE IN THE LONDON SCHOOLS

The recent triennial election of members to serve on the School Board for London has excited unusual attention in England, because it was generally felt to have an important bearing on the future educational policy of the whole country, and to raise many questions of principle which were of permanent, and not merely local and temporary, significance. It seems to me that some of these questions, and some slight notice of the manner in which Londoners have replied to them, may interest American readers, albeit the traditions of their public school system differ so largely from those which prevail in England.

It may not be unfitting if I here transcribe from a recent article of my own,[1] written a few weeks before the election, a preliminary statement of some facts which, though somewhat trite, may be needed to make the nature of the recent contest intelligible to readers at a distance, who are not familiar with English schools:

> Our English system of primary education—if system it may be called—differs essentially from the systems in force in the European and American continents. It has not been fashioned as a whole by any statesman or philosopher, but has become what it is by the slow process of evolution, and by the teaching of experience. It is not, as in Lower Canada and in some of the German States, a denominational system, which, assuming that every citizen is either a Catholic or a Protestant, provides two kinds of religious instruction at the public charge. Nor is it, as in France or the States of the American Union, a purely secular system, which excludes theology in any form from the common school, and leaves the Churches to give supplementary teaching in their own schools, and at their own cost. It is the product of a long series of tentative efforts, concessions, and compromises; and though lacking in uniformity and symmetry, like many other English institutions, it has shown in the course of years a power of adapting itself to the

[1] *Nineteenth Century*, July, 1894

changed circumstances, to the feelings and traditions, and to the religious opinions of the English people.

This general statement is conspicuously illustrated in two ways: (1) in the recognition of voluntary and denominational schools as part of the public provision for instruction; and (2) in the constitution of those rate-aided schools which have been called into existence by the agency of School Boards. From 1839, when grants were first made by the newly constituted Committee of Council on Education, down to the Act of 1870, all the work done by the Education Department was effected by way of "grants in aid" to local and voluntary bodies. The State established no schools, and took no steps to require that schools should be supplied where the provision was insufficient. It simply availed itself of voluntary agency; confided to the hands of local committees full control over the choice of teachers, the course of religious and other instruction, and the general management; and made liberal annual grants on the very easy conditions that the teacher should possess a proper qualification, and that the school should be open to inspection, and should conform to the regulations laid down in the Code. Since 1870, the further conditions exacted have been that two hours of unbroken secular instruction shall be given at each meeting of the school, and that parents may claim exemption from any religious instruction which they disapprove.

The Board Schools which have been since established, in accordance with the provisions of the Act of 1870, are required to fulfill the same educational conditions. They receive annual grants on the same scale, determined partly by the numbers in attendance, and partly by the efficiency of the teaching, as shown by the official examination of the scholars. The Boards are at liberty to make their own arrangements respecting religious instruction, subject only to this provision: "No religious catechism or religious formulary which is distinctive of any particular denomination shall be taught in the school." This is the well-known "Cowper-Temple clause."

A system of public instruction such as this would necessarily appear to an Abbé Sieyès or to the framers of the Code Napoléon to be lacking in unity and logical coherence. But it has, at least, succeeded in placing within the reach of every child in the country an elementary school under public supervision, and conforming with more or less success to the regulations laid down by Parliament. And it has so far conciliated the various religious and philanthropic bodies which have concerned themselves with public education that not one of them holds aloof; all have accepted the conditions imposed by the State; all receive its aid, and are co-operating loyally with the Education Department in the fulfillment of a great public work. These results are worth attaining, even at the cost of some loss of symmetry and of theoretical perfection.

The continued recognition of the voluntary schools, established to a large extent by religious bodies, as part of the national provision for elementary instruction, is the chief and most characteristic feature of the English system. And in the course of a long life, of which more than half has been spent in close contact with schools and training colleges, I have learned to set a high value on the collaboration of the voluntary agencies with the State. Those agencies supply us with schools of different kinds, all alike in seeking to give

sound elementary instruction, but differing materially in method, in organization, and in many minor details of administration. From an educational point of view this variety is of great importance, as it is most undesirable that all the schools of the country should be of one type. Moreover, the denominational schools enlist in the service of the State a large body of intelligent, philanthropic, and religious persons who are often in close sympathetic relations to the children and their parents, and whose very effective aid would not be available under a system controlled altogether by Imperial or municipal officers.

Yet, notwithstanding the zeal and effort by which, since the passing of the Education Act, voluntary schools have been established and maintained, so that the average attendance in those schools which stood at 1,152,389 in 1870 had risen to 2,300,377 in 1892, the number of scholars in the Board Schools shows a much more rapid rate of increase, and the last report of the Education Department states that the average attendance in those schools, which in 1874 was 138,293, and in 1876 amounted to 328,071, had reached 1,704,130 in the year 1893. Year by year the disproportion in the rate of increase between the two classes of schools becomes more marked; and thus the character of the religious teaching in the Board Schools becomes more and more a matter of concern to that large portion of the English people who attach value to such teaching.

There are now 2392 School Boards in England and Wales. In the exercise of the discretion allowed under the Act, 91 of these Boards have determined to omit religion altogether from their scheme of school work; 70 of these Boards are in Wales and 21 in England, but they are without exception in comparatively obscure villages, and with a very small population. In the schools of the rest, including all the boroughs and places of importance, the Bible is read and careful provision is made for religious teaching. Birmingham stands nearly alone among towns in requiring that the Scriptures shall be read without note or comment. But it may be said generally that the Board Schools concur in principle with the policy from the first adopted by the School Board for London. The regulations of that Board provide that "the Bible shall be read, and there shall be given such explanations and such instruction therefrom in the principles of morality and religion as are suited to the capacities of children." The teachers are further instructed "to make the lessons as practical as possible, and not to give attention to unnecessary details." A syllabus has been drawn up making provision for regular progressive lessons, including the Lord's Prayer and the Ten Commandments, sacred biographies, the historical parts of the Bible, facts and lessons from the life of our Lord, the principal parables, and the learning by heart of passages inculcating truthfulness, temperance, and obedience to parents. Regular examinations are held in these subjects periodically by the Board's officers; and the Board has cordially accepted the offers of Mr. Francis Peek and of the Religious Tract Society to award prizes for Scripture knowledge. The prizes and certificates thus offered are much valued. At the last examination, the head teachers were allowed to send up ten per cent. of the scholars in the highest three standards for a special written examination in Scripture. Of the 6908 scholars thus examined—boys and girls—1027 obtained prizes and 2231 were entitled to certificates. A simi-

lar system of graduated instruction, of examinations and prizes, exists for the pupil teachers, and the reports of the examiners show that great attention is given by the teachers to this part of their duties.

The outcome of these arrangements, which, *mutatis mutandis*, may be said to prevail generally and to be characteristic of the entire system, is that a successful effort is made in the Board Schools to bring up the children in the fear of God, with a reverence for His Word, a considerable knowledge of the history and poetry of the Bible, and of its plainer moral lessons, and especially of the life and teaching of our Lord; but that it is no part of the duty of the teacher to give instruction in controversial theology, or to permit the school to serve as a propaganda for the tenets of any particular religious denomination. No one who knows the schools well can doubt that under these limitations religious and moral teaching of a very precious kind is imparted in the schools, and that the influence of this instruction on the conduct and the character of the children, and on the religious life of the nation, has been profoundly felt.

It may be thought by some that it is descending to a lower ground when we speak of the biblical instruction as a great civilizing power and as an elevating and refining influence on the intellectual life. But this aspect of the question ought not to be overlooked. Mr. Matthew Arnold was wont to insist on it with characteristic lucidity and energy. Literature, he always urged, was an essential factor in the cultivation of character and taste, and this is largely provided in higher schools by the study of the ancient classical writers. But for the mass of the people this kind of cultivation is only to be attained in one way.

"Only one literature there is—one great literature for which the people have had a preparation—the literature of the Bible. However far they may be from having a complete preparation for it, they have some, and it is the only great literature for which they have any. . . If poetry, philosophy, and eloquence—if what we call in one word *letters*—are a power, and a beneficent wonder-working power in education, through the Bible only have the people much chance of getting at poetry, philosophy, and eloquence. . . Chords of power are touched by this instruction which no other part of the instruction in a popular school reaches, and chords various, not the single religious chord only. The Bible is for the child in an elementary school almost his only contact with poetry and philosophy. . . All who value the Bible may rest assured that thus to know and possess the Bible is the most certain way to extend the power and efficacy of the Bible."[2]

And in expanding this view into more specific suggestion, he gives in one of his reports this counsel to school managers—counsel which has been virtually adopted now by School Boards throughout the country:

"Let them make the main outlines of Bible history, and the getting by heart a selection of the finest Psalms, the most interesting passages from the historical and prophetical books of the Old Testament, and the chief parables, discourses, and exhortations of the New, a part of the regular school-work. This could raise no jealousies, or if it still raises some, let a sacrifice be made of them for the sake of the end in view. Some will say

[2] Preface to *The great prophecy of Israel's restoration. A Bible reading for schools.*

that what we propose is but a small use to put the Bible to, yet it is that on which all higher use of the Bible is to be built, and its adoption is the only chance for saving the one elevating and inspiring element in the scanty instruction of our primary schools from being sacrificed to a politico-religious difficulty."[2]

No practical difficulties have arisen in the interpretation or in the actual working out of the very simple and intelligible programme of the School Board. Of theoretical difficulties, indeed, much has been said on platforms and in pulpits, and by writers in religious newspapers, who cannot believe that any religious instruction can deserve the name which does not favor the interests of some particular sect or party. These theoretical difficulties, however, are virtually unknown in the school itself. The skilled teacher who finds himself face to face with little children, and who knows something of their character, their present immature opinions, and their spiritual and moral needs, soon learns to feel how infinitely petty and irrelevant are the topics which furnish the watchwords of rival parties, and the staple of sectarian disputes outside. To such a teacher, or indeed to any thoughtful Christian parent, probably the last thing he would care to discuss with a young child would be the difference between Church and Dissent, or between the tenets of a Baptist and those of a Unitarian. These differences, no doubt, become serious and significant as life advances and as opinions are formed. But they have little or no meaning to a young child, and are wholly out of place in a scheme of primary instruction.

Now it is manifest that an arrangement of this kind implies, on the part of those who maintain it, a spirit of conciliation, and a readiness to forego some of the advantages which the earnest members of any section of the Christian Church would desire to secure, if they acted apart from the rest of the community, and were free to instruct the children in the distinctive tenets of their own communion. Considering the diversities of religious belief among the English people, it is simply impossible to provide, in the common school, theological instruction in all cases suited to the convictions of the parents. And hence the plan which has now been in force for twenty-three years, and which provides simple unsectarian Bible teaching in the Board Schools, and leaves to the Sunday Schools and the Churches the task of supplying whatever else of definite doctrinal instruction is desired, has on the whole commended itself to the majority of practical men. It has in fact so far proved acceptable to the parents that, out of about half a million of scholars in the London Board Schools, the claim for

[2] Report to Committee of Council on Education (1869), p. 299.

exemption from religious lessons, which under the name of the Conscience Clause is the statutory right of every parent, has only been made in the case of about four hundred children, chiefly those of Jewish and Roman Catholic parentage.

It may be said generally that those who wish to maintain the existing compromise are willing to subordinate the special interests of their respective sects or Churches to those larger interests of moral and religious culture which are common to all Christian Churches alike. But the position they occupy is thought by many to be illogical; it is unsatisfactory on the one hand to those who think that religious teaching not founded on definite and dogmatic articles of faith is unreal and useless; and on the other to those who believe that the province of the State in the matter of education should be strictly limited to secular subjects, and that the whole business of religious teaching and discipline should be relegated to the parents and to the Churches. It will readily be believed that in a Board composed of fifty members, elected by popular suffrage, there are some who incline to one or other of these extreme views. Roughly, however, the Board is divided into two parties, the one calling itself *Progressive*, consisting mainly of persons of liberal politics, whose chief aims are avowed to be the full development of the School Board system, liberality and efficiency in the schools, a scrupulous adhesion to the existing arrangement respecting religious instruction, and a watchful dread of any measure which would allow the schools to become a propaganda for the distinctive doctrines of any sect. The other party, which is generally known as that of the *Moderates*, is composed largely of Conservatives in politics and members of the Established Church. Among these are many who show equal anxiety to make the schools efficient; but who dislike any policy which would seem in the least degree hostile to the interests of the voluntary schools. As a rule this party may be said without offense to be rather less enterprising and liberal in its educational policy than the other. In the Progressive party are two or three avowed secularists; but they have never succeeded in inducing their col-

leagues to reduce the amount of religious teaching or to depart in any way from the existing compromise. On the other hand, the Moderate party, which in the Board elected in 1891 was in a substantial majority, contains two or three active members, including the late chairman, who think that the teaching given in the schools is not definite enough; and who have been alarmed by the belief that Arianism or some other form of heresy might be taught, if the regulations laid down by the Board were loosely interpreted. They have accordingly drawn up a circular of instructions to the head masters and mistresses of the schools, and in this document it is set forth that the Board desires the theological teaching to be distinctively Christian; and proceeds to define the essentials of the Christian faith in terms which amount to a statement of the doctrine of the divinity of Jesus Christ, and the orthodox Trinitarian creed. The whole body of the Moderate party adopted this view, and the circular was duly issued. A storm followed. More than three thousand of the teachers protested against a regulation which diminished their freedom and placed a new and more stringent interpretation on the requirements of the existing syllabus. The ministers and members of the various nonconformist Churches, who had up to that period been accustomed to work very harmoniously with members of the Established Church in the management of the schools, looked upon the circular not only as unnecessary, but as a violation of the compact on which the religious policy of the Board had hitherto been based, and they looked forward with some alarm to the prospect of a succession of new interpretations of Christian truth, by zealous sectaries who might happen to command from time to time a majority in the Board.

In these circumstances, the election in November last became one of exceptional interest, and gave rise to an unusual amount of public discussion. The religious question practically overshadowed all other matters of controversy, and the battle was mainly fought on the policy of the circular; and on the question, "Shall we rest content with the arrangement we have for securing to the children some acquaintance with the

Scriptures, and some appropriate yet unsectarian religious training? or shall we declare the existing provision unsatisfactory, and seek to impose new tests and guarantees of orthodoxy on the téachers in our common schools?"

The metropolis is divided into ten boroughs or districts, each of which elects four, five, six, or seven members according to its population. An elector, *e. g.*, in a district which returns five members, has five votes, and can give them all to one candidate, or distribute them at pleasure. This device was adopted by Mr. Forster, the author of the Education Act of 1870 with the avowed purpose of protecting the interests of minorities, and of trying on a comparatively small scale an experiment in proportional representation. It was felt that several sections of the electors, *e. g.*, the Roman Catholic voters, were not numerous enough to carry one of their own candidates by the ordinary mode of election, and were yet entitled to some representation in regard to so important a matter as the education of their children received into the common school. By what is called in electioneering slang "plumping," it becomes possible for a well-drilled body of electors, even though numerically small, to secure one candidate out of five or six. In this way the efforts of the head masters and mistresses of the schools have in one or two instances succeeded in placing a nominee on the Board. A little reflection will, however, show that such a mode of election may easily fail to secure a true representation of the wishes and feelings of the inhabitants. Much care is needed in the selection of the candidates by the rival parties, and still more in the allocation of the votes among the candidates of each group. The fear lest the party should not prove strong enough to carry, for example, three members in a constituency entitled to elect five, induces the electoral committees to put forth two only, and to advise their friends to divide their votes between them. It perhaps proves that the party is unexpectedly strong, and in that case much power is lost. In the recent election many votes were wasted in this way. In nine out of the ten districts into which London is divided, a Progres-

sive candidate headed the poll by a large majority; the total number of votes cast in favor of the party exceeded by nearly 150,000 the total polled for the Moderate candidates; and this number represents a plurality of about 30,000 persons. Yet owing to the capricious operation of the cumulative vote, the result was to give to the Moderate, or as it is often called, the Church or the "dogmatic" party, a majority of three on the Board, the number being 29 of that party as opposed to 26 Progressives.

This result was not expected, as the whole political organization of the Conservative party and a large number of the clergy of the Established Church were enlisted on the side of those who had framed the circular, or who helped by means of it to take new securities for doctrinal orthodoxy in the Board Schools. In pulpit and on platforms, much was said about the importance of definite Christian teaching; and many electors were easily led to believe that there was no religious teaching at all in those schools. Hence it happened that in the richer districts of London, inhabited mainly by persons whose own children do not attend the Board Schools, and who are for the most part Churchmen and Conservatives, there was a considerable Moderate vote; but in all those parts of London where the people use the schools most, and know them best, the majority for the Progressives was overwhelming and decisive. Had this been foreseen, and had the party leaders had the skill to manipulate the cumulative vote, the new Board would have resulted in a clear majority of five to that party, instead of a minority of three.

In these circumstances the Moderates will be clearly unable to give effect to the policy to which their party had committed itself: and although it happens to be numerically a little stronger on the Board, it has been so weakened and discredited by the recent discussions and by the verdict of the constituencies, that the revival of the circular, or of any attempt to *exploiter* the public schools in the interests of orthodoxy as understood by the Church of England, is now practically impossible. Substantially it may be said that to the

question submitted to the voters at the recent election: "Do you wish for a continuance of the system which seeks to give, to make the Bible an effective instrument both in the intellectual and the spiritual education of the young?" the answer of the London electors, especially of the parents of the children concerned, has been emphatically in the affirmative; while to the further question, "Do you desire to supplement the present scheme of religious instruction by any more formal statement of theological doctrine?" the reply has been an equally emphatic negative. On the whole it is virtually certain that the cause of Scriptural but unsectarian instruction in the common school has been greatly strengthened by the recent election, and may be regarded as firmly established for the present at least.

It seems to me that this is a result on which the community may well be congratulated. To omit the literature and poetry of the Old Testament and the moral teaching of the New Testament from the curriculum of our elementary schools would be to part with much that is ennobling and refining, and that has a visible influence on the conduct and aims of our scholars. On the other hand, to bring into prominence, in the instruction of young children, dogmas and articles of faith which are necessarily unintelligible to them, and which belong properly to a later stage in the Christian life, is to involve ourselves in endless controversy and difficulty, which would assuredly lead ere long to the abandonment of religious instruction altogether, and to the establishment of a purely secular system.

A deeper question, one of more vital interest to teachers than any concerning educational politics or sectarian rivalry, is involved in the recent discussion, "What is the sort of elementary teaching in the principles of religion which is best suited to the nature and needs of childhood, and which is most likely to prove a good foundation for a noble Christian life?" By a large number of earnestly religious people, and by nearly all the ministers of religion, the question would probably be answered in the same way: "Teach the young learner first of all what he is to *believe*. Formulate a creed which shall

embody all the essentials of Christian truth, and make him accept it, or at least learn it by heart." Thus catechisms and confessions of faith have come to be regarded by many as the logical and necessary preliminaries to the formation of religious character and conduct. But experience does not corroborate this theory. It is not found that the method serves its intended purpose. Young people who have been forced in early years to affirm propositions which they do not comprehend, find in later life that this educational discipline has done little or nothing to shape their maturer convictions; nay, rather, that it has often had the effect of producing a strong reaction, and creating an impression that an unfair advantage has been taken of their youth and inexperience. And there are other reasons which may well cause teachers to distract some of the traditional methods of inculcating doctrinal truths in young children. All the best students of the philosophy of mind, and of the nature of childhood, have learned to revise their methods in other departments of instruction. The older writers on grammar, on geography, on science, were wont to place at the beginning of their treatises, definitions, rules, and formulas, which, because they embodied important truths, were pressed on the acceptance of the young scholar at the threshold of the temple of learning, and supposed to form the best guides for his future progress. But a skilled teacher, who has studied the material on which he has to work and the forces at his command, knows well that he should adopt another method. If he has to teach arithmetic he does not begin with a rule; he offers an example, makes clear the nature of the problem which has to be solved, invites the co-operation of the scholars in "thinking it out," and working it; and at the end says to them: "Now, what should be our rule for dealing with such problems in the future? Let us put into words the arithmetical truth we have arrived at." So in grammar, in science, and in all lessons on the phenomena of the visible world, and on conduct and daily life; the illustrations are first given, the interest and observation are quickened; facts are noted and verified, and then the larger truth which explains and sum-

marizes them all emerges by degrees, and is enunciated and lodged in the memory. It is taught last, not first. There is only one apparent exception to this rule, that of the axioms and postulates in pure mathematics. But these are self-evident as soon as they are stated. Intuition here makes verification superfluous. But neither in mathematics, nor in any other department of secular knowledge, do the best teachers now invite their pupils to acquiesce in large formal generalizations of truth, until they have led up to them by previous appeals to the intelligence, to the experience, to the curiosity, or to the sympathies of those pupils. Can it be supposed that an opposite method is likely to prove effectual in regard to the highest and most sacred of all the subjects of instruction? Do not the life and teaching of Jesus Christ, the history of saints and prophets, the poetry of Isaiah and the devout aspirations of David furnish a truer and more effective introduction to a life's course of religious training, than any of the theological propositions on which religious men differ; and which derive all the value they possess to the mature Christian from the fact that they are the result of his own thought, conviction—possibly of struggle; and have not been prematurely forced on his acceptance by the authority of others? No one who looks with fresh eyes on the life and possible destiny of a little child, and tries to realize his danger, his temptations, his weakness, the manifold forms of evil which will beset him, and against which he should be guarded, can seriously suppose that heresy is the one danger against which precautions most need to be taken. It is surely not the first duty of a teacher to form a young child's opinions; but to inform his understanding, to acquaint him with facts, and to influence his character. We want to see the scholar grow up endowed with knowledge, with reverence, with the habit of truthfulness, industry, and obedience, and with generous aspirations after usefulness and a higher and better life. Who that has studied with affectionate insight the thoughts and the doings of children, or who remembered the experience of his own early life, would imagine that orthodoxy

was the one supreme and necessary factor in elementary education?

But be this as it may; the fact remains that on no other conditions than those which I have tried to describe, can we hope to retain religious instruction in our rate-aided schools at all. In America, conscious of the enormous difficulty of reconciling conflicting sectarian interests, the question has been set at rest by limiting the instruction in the common school to secular teaching. No doubt the plan has its advantages, not the least of which is that it makes the churches and all God-fearing parents more conscious of their own responsibility and more anxious to supply by their own exertions that teaching which the day school fails to give. We in England have not yet given up the hope and belief that a compromise is possible, and that, subject to the legal right of the parent to withdraw his children from any religious lessons which he disapproves, Scriptural and unsectarian teaching should find its place in the curriculum of our schools. For my own part, as an old inspector, I believe that we could not abandon this compromise without parting with something very precious. But its maintenance demands on the part of our citizens some sacrifice which the more earnest among them will find it hard to make. It calls for forbearance, for a conciliatory spirit, and for a determination that the public schools shall not be employed to subserve the interests of any particular church or sect. For the present the verdict of the London electors, as in that of most of our great towns, is distinctly in favor of this settlement. And if the settlement is hereafter disturbed, it will not be by the purely secular party, which would dispense with religion altogether, for these are few and comparatively uninfluential; but by the zealous dogmatists, who are seeking to claim more of doctrinal precision in the school instruction, and are thus helping to make the continuance of the compromise impossible.

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VI

RELATION OF THE KINDERGARTEN TO THE PRIMARY SCHOOL

A great deal is being said to-day about the gaps which are thought to exist between successive members of our American educational system. In so far as such possible gaps depend merely upon the amount of knowledge-materials acquired in the lower school as a basis for further acquisition in the higher, or in so far as the pupil finds only that the effort he once put forth in the former falls considerably below the standard now required in the latter in independence, continuity, strength, and amount, they are not so alarming. Such leaps rather challenge the pupil's intellectual courage and mettle; they are often a fair test of the quality of earlier training. But we regard the matter in a very different light, wherever we find that certain discrepancies between successive educational institutions are due to forces in the one or the other or both, that are more or less out of harmony with the educational problem as a whole, and which, therefore, fail to preserve the desired continuity. Wherever the transition from one school to another, or from a lower institution to a next higher, breaks in prematurely upon the continuous and regular development or exercise of power, habit, and interest, there is a needless and injurious waste of energy and time.

It is a breach of this kind, I believe, which exists between the kindergarten and primary school, and which kindergartners and primary teachers are beginning to appreciate more fully than ever. A leap in the continuity of educational effort at this point appears the more serious and its removal the more urgent, when we consider that the years of the child's life corresponding to the kindergarten and primary grades are the most impressionable and receptive, and hence also the

most inconstant and sensitive to change. That which he has readily acquired (as a language) *e. g.*, through the influences of one environment, may be speedily and almost wholly forgotten if that environment is exchanged for another. It is this fact—a very fortunate and significant one in the economy of the child's development and nature—that in part conditions the waste of time and effort in his education. The child passes directly from the kindergarten to the primary grades; his best interests demand a unity and continuity in the educational aim and effort of this entire period that does not yet exist. The child is always the center of all educational measures whatsoever. It is primarily this homely truism, in fact, which prompts the educator's regard for unity and continuity, and his discontent with all conditions that result in vacillating, disconnected, or inharmonious effort. Kindergarten and primary school must therefore seek a foundation for the unity of their labors *first* in the consciousness that they have a common aim in the education of the child. The verdict is practically unanimous to-day that this end is broadly ethical; moral strength of character, *i. e.*, the ability to *act* thoroughly and persistently in accordance with broad and high ideals and "forever nobler ends," is almost universally recognized as the ultimate end of education, because the ultimate end of human existence. The problem of education is as broad and vital as the struggle of mankind. And we must concede, I think, that the kindergarten has, from the first, been conscious of this end; indeed, I believe that its very vitality has been largely due to its broad grasp of the educational problem as a whole. The father of the kindergarten tells us that the "object of education is the realization of a faithful, pure, inviolate, and hence holy life."

The primary school, hampered by the demands of tradition and crude utilitarianism, has had to *grow into* a realization of the full problem. But this realization has come, and the more that the primary teacher becomes conscious of her labor's great end, the more does it mold the character of her curriculum and her instruction. In this one thought, therefore, which

centers in the child's whole ethical being, kindergarten and primary school find a common motive that must throw some light upon all their educational measures.

But as we approach the subject of educational means and measures, a new question of relation presents itself. May not kindergarten and primary school conform more closely to each other in their choice of educational means and in the arrangements of their various school activities? Again we must appeal to the child for an answer to our problem. Harmony in the work of the kindergarten and primary school presupposes in the nature and activity of the child a common or like basis for the educational efforts of each stage. If the children of the two stages evince characteristically like tastes, interests, impulses, or activities, these, as the factors which must essentially condition all development, can alone be made the basis of an harmonious and continuous educational effort throughout both kindergarten and primary grades.

We are still at work upon the interesting and all-important problem of what the true nature of the child at various stages in his development is. But we are, at present, not wholly without some insight into certain phases of child-nature, that may help us to solve the problem of succession in educational work.

One of the best analyses, based on extended studies in child-psychology, has been furnished by Director Hartmann of Annaberg; the results of his analysis appeal directly to the practical experiences of the sympathetic kindergartner and primary teacher. Without entering into a detailed statement of Hartmann's analysis, we may sum it up briefly as follows: In the years of the child's life corresponding to the kindergarten age, his mental attitude is no longer one chiefly of receptivity, as in the first three years of his life; but side by side with the lively receptive activity of the senses appears the equally lively reproductive activity which is manifested in the strong impulse for expression, thus giving unmistakable evidence of the development of self-consciousness and the presence of a lively inner life. The child begins to compare, to

distinguish, to imitate, and to combine; *i. e.*, thought begins. At this age then there is the substantial beginning of an inner life of thought, which finds its most charming expression in the free plays that are prompted by the childish fantasy. The child plays intelligently and with real ingenuity; he understands better how to entertain himself, is inquisitive, has a thousand fancies, asks much, and listens most willingly to those stories that permit free flights of imagination. His interpretation of natural objects is mythical; they become the symbols of its own fancies. The child desires to be entertained less than to be occupied. He shows some tendency to reflect and to be more prudent. The inconstancy of infancy gradually disappears; the child is more capable of prolonged attention to a single object. The sense of honor awakens; he is sensitive to praise and blame; conscience announces itself in the moral judgment; the beginnings of a participation in the joy and pain of others appear; the child rejoices with the joyful, weeps with the sad.

The three following years, corresponding approximately to the primary grades, Hartmann characterizes as follows: In general those characteristics so prominent in the kindergarten age are still marked factors in the first primary years, a fact which should have a very decided weight in the discussion of this problem. Free and vivid imagination is still the predominant form of thought-activity; hence the child's conception of external realities is still more or less shaded by his symbolic tendencies of thought. There is still a lack of just those stable and definite conceptions of natural things that give control over the circle of thought. As regards volitional activity, the child naturally evinces implicit trust in the authority of the teacher or parent, and usually readily subjects his will to theirs. On the other hand, he is by no means free from selfishness and egoism; he is very apt to look out for his own personal advantages to the disregard of the welfare of his comrades.

Brief and incomplete as it is, this summary still points unerringly to certain traits common to the child in both stages of

development. They are (1) great receptive activity of the senses; (2) growing out of this sense-activity, the beginnings of thought, as witnessed in naïve comparison, discrimination, combination, and imitation, but still generally under the control of the fantasy; (3) strong impulses of imitation and expression, which find their most perfect realization in play (and we should note that the expression is never studied, but always the spontaneous concomitant of the inner processes); (4) a free and more or less capricious imagination, accompanied by a strong tendency to conceive of natural objects as symbols of his own fancies; (5) a natural trustfulness in the authority of teachers and parents, but an equally natural tendency to view all moral relations first merely in the light of the needs and desires of self; (6) sensitive sympathetic emotions that may easily be appealed to for higher motives; (7) great and naturally irrepressible physical activity; the *entire* physical child is an expression of the realm of thought, feeling, and desire within.

These traits, which are certainly among the most prominent features of the years of childhood now under consideration, point to as many needs in the early education of the child.

The naturally lively but superficial activity of the senses and the naïve but imperfect thought-processes that follow call for a closer acquaintance and occupation with objects of nature. The play-impulse, and the impulses of imitation, that are almost always the simultaneous or spontaneous concomitants of thought in the child, demand cultivation along natural lines, such as language and free graphic representation. The free imáginative powers call for an ideal world of characters and actions beside the real, in which the child may live in fancy—such a world, *e. g.*, as is offered by the myth and fairy or folk-lore tale. The natural trustfulness of the child, combined with his strong sympathies, offers the best of opportunities for directing his will; while the tendency to center all moral relations in the welfare of self calls for contact with the moral and social obligations involved in the life of the kindergarten and public school. Finally, there must be a thorough practical regard

for that freedom of physical activity peculiar to childhood. These are certainly all lines of educational effort that should be common to both kindergarten and primary school; it seems to me that they offer a fair and rational basis for a closer relation between their work, one that would go far toward preserving and fostering a continuity in the development of those powers that we have already shown to be natural to the child from the third to the seventh year. The character and aim of their work are essentially the same; all legitimate differences between them will be determined chiefly by the *growth* of the child's powers.

In many respects the kindergarten has been most fortunate in its past history. Almost wholly free in its methods from the traditional shackles of centuries, it has always stood very close to the child's nature and the child's world; hence it has been able to meet more efficiently than any other institution the natural impulses, desires, and interests of infancy and childhood. There are good reasons for this: (1) It was sincere in its recognition of the play-impulse as a means of education and in the rights of the child to physical activity. (I need not stop to illustrate.) (2) Froebel's idea of the "spontaneity of activity" in the child recognizes that to the child thought and expression are practically one, simultaneous; that the presence of a live-coal thought in the child's mind drives him irresistibly to its expression in some form or other. Hence the kindergarten has never been an institution of suppression, but rather a force for the stimulation of free expression. (3) The kindergarten has always sought to create an atmosphere about the child in which conceptions of moral and social obligations could exist and thrive. (4) It has to some extent (though not sufficiently) brought the child into more familiar relations with nature in the contemplation of natural objects. (5) Through its stories it has furnished the child with an imaginative world of ideal characters and actions. (6) It has sought to foster the higher emotions and the æsthetic tastes.

While the primary school has been much less fortunate in its past history than the kindergarten, being hampered on the

one hand by the demands of tradition and on the other by the demands of those who seem to have regarded it as a sort of treadmill of drudgery preliminary to life proper, through the efforts of those who have conceived of its mission in the light of the whole educational task, it has been lifted from a condition of almost complete formalism to the level of an educative institution. Those who have saved it have placed a new ideal before us—an ideal in which man and nature are brought into the child's world in the form of imaginative literature and nature-studies, in which worthy thought as well as form shall have its place.

But while it is true that many of the educational measures distinctive of the kindergarten in the past, and of primary work in its newest phases, are admirably fitted to develop the interests, powers, and activities peculiar to childhood, and while they have in so far pursued some lines of work that might have resulted in a closer relation between them, the possibility of any such relation is thwarted by the force with which each has stamped its work with a line of formalism peculiar to itself. Each has departed more or less from what the child's nature (the true center of all educational effort) demands: the kindergarten in conceding so great prominence and universality to artificial means of instruction; the primary grades in making the acquisition of formal facilities almost its sole end.

I shall devote the remainder of this paper to a plea for the deformalization of both kindergarten and primary grades.

I know that the attitude of progressive kindergartners on the question of the gifts has changed materially in recent years. They have withdrawn their reverence for certain mystic virtues with which an equally mystical philosophy had supplied the gifts, and have come to regard them simply as peculiarly fitted to certain specific ends. But this change, which has been brought about in spite of the claims still made by some prominent kindergarten authorities that the gifts embody absolute philosophic principles of education, will not stop here; it is but the beginning of a still more thorough

transformation, sanctioned by the spirit of Froebel's own words. Let us inquire into the principles now supposed to underlie the use of the gifts and into the virtue still claimed for them.

At once we are brought face to face with the central thought or law of Froebel's system, "an all-controlling law," "necessarily based on all-pervading, energetic, self-conscious, and hence eternal unity." This unity is divine, is God. In Froebel's mind the possibility of education, in fact, depends upon this great principle of unity, *i. e.*, "upon the identity of the cosmic laws with the laws of mind." There is no multiplicity of educational problems, but the whole cultural task is essentially a unit of effort. Art, science, literature, are but the means of stimulating man's most perfect ethical and religious development. Educational means and methods must therefore contribute directly toward establishing in the soul of the child an appreciation of the law of universal unity. It is claimed the gifts do this. Shorn of its hyperbolic expression and of those philosophic conceptions that are still justly points of dispute among philosophers, Froebel's principle of eternal unity still appeals strongly to the educator. Certainly the whole tendency of science is toward universal law; the essence of thought is identification; the possibility of permanent, useful, advancing human institutions rests upon the community of interests. But it is claimed for the gifts that they contribute directly to the above end; this claim I dispute. It is impossible for the child mind to grasp such universal unities as the gifts, especially the three fundamental forms, are supposed to typify; the child does seek unity naturally at this age, but it seeks and finds it between individual objects, and it is impossible at first for it to grasp even typical forms in any other light than as individuals. Such appreciation of unity as Froebel conceived of is only the outcome of mature thought, and it starts naturally not in the recognition of analogues between typical forms and individuals, but with the identification of common attributes in the individual objects of nature. It is true the rational kindergarten aims only at beginning the

cultivation of this power of identification; but the gifts divert the tendency of the child to compare concrete things with each other, and prompt rather the comparison of type-forms with individuals, which is unnatural. I am utterly at a loss to account for the statement of a prominent authority on Froebel, that the gifts are "the most concrete materials of growth provided by him." Some of Froebel's own words seem to me to embody a deeper truth than the gifts will ever realize. He says: "only that knowledge furthers the ripening of the mind which mounts up through its own activity and effort from the perception and contemplation of external objects to the thoughts or conceptions that dwell in things." Why, then, thrust a conventional expression of the "thoughts and conceptions that dwell in things" into the foreground first? Yet Mme. v. Marenholz Bülow speaks of "an education which, at the *start*, enables the human mind to see the connection and the originating and finally effective unity of things." In other passages of his writings, it is true, Froebel, who almost always occupied a unique position of independence, shows that he was not wholly free from that delusion of most ancient and many modern schoolmasters, viz., that the untutored mind can grasp a general or universal truth directly, if it is but expressed in a universal form.

Perhaps one of the most popular lights in which the gifts are regarded to-day is that they are essential aids in the training of sense-perception and hence ultimately in arousing scientific interest. We are reminded that "the gifts are the archetypes of nature"[1] a conception rather more daring than exact. Again we are told that "in the technical kindergarten gifts and occupations, Froebel presents what may be called a primer of the book of nature." Another writes, "these elementary forms show to the child what he cannot see for himself." But it seems to me that there is a very serious objection to this interposition of conventional forms between the child and nature or in their use as a key to nature. These forms, by virtue of their very perfection, tend to give inflexibility to the perception, wherever they are used

[1] Blow, *Symbolic Education*, p. 123.

as standards of comparison. An essential condition of the scientific attitude of mind is mobility in the materials of thought which must constantly yield to the variations of new impressions. I do not ignore the necessity of symbolism in the life of the child; but I claim that he needs no conventional key, no standard, no symbol for the interpretation of nature other than the images themselves which nature stamps upon his soul. Least of all should he be given a key that is able to symbolize but one property, form, and that but rigidly and imperfectly, while it lacks that most vital of all qualities inherent in a large part of nature, that part which is closest and appeals most forcibly to the child, *life*. Even the ideas of motion which the gifts might stimulate are far from being "archetypes" of nature's motions.

In that most admirable and inspiring work which has recently appeared in the International Education Series from the pen of Miss Blow, *Symbolic education*, the broad claims of the gifts are argued from the standpoint of the parallelism between individual and generic or racial development, and of the need of symbolism in child-life. I accept these principles, and I believe that the English language does not contain an abler exposition of the Culture Epochs than the two chapters in her book on "Childhood of the race" and the "Symbolism of childhood." But all of her illustrations and the conclusions drawn directly from them seem to me to point away from the gifts as educational means at this age, and I fail to detect the logical connection between the latter and the author's deductions. Let me quote:

"What is a symbol but a *natural* [the emphasis is mine] object, action, or event, which is analogically related to some spiritual fact or process" (p. 101).

"The error of all formal teaching is that it imposes a result without reproducing the experiences through which it was reached" (p. 116).

"The characteristic of all vital teaching is the development of ideas in the order of their origination" (p. 116).

These thoughts are essentially sound. But, I ask, does the

natural symbolism of either the child or the race seek the most formal of all objects? Are the gifts properly "natural objects?" And are not the analogies which they are made to symbolize either far above the child's plane of thought, or else too subtle and broad for his interests, or false? The true symbol contains some simple but unique and poetic suggestions of analogy to the inner thought. In kindergarten literature we meet the significant thought again and again that "the too perfect toy chills the imagination, and thence the child turns from it to objects which, by remotely suggesting an ideal, heighten the activity of fantasy" (p. 85). But the same author concludes (p. 87): "It is superfluous to suggest to anyone familiar with the kindergarten how perfectly the ideal of play material is realized in the Froebel gifts"; but the very perfection of these forms and the remoteness of all possible analogies, except those of form, which they can be made to suggest, seem to me to preclude their recognition as the ideal and universal symbols of the child's play. Furthermore, the entire argument, when based upon the parallelism of individual and generic development, is guilty of *petitio principii*, for while both child and race may find in the "natural object, event," etc., the suggestion of analogy essential to the true symbol, it is quite immaterial to both whether that symbol be *also* a *type-form* or not. Indeed the perfection of the latter often interferes with its suggestiveness as a symbol. The early race could make the clouds symbolize, but not typify, the maids in swans' down; the child can make the limb of a tree symbolize, but not typify, the horse, the "upstairs" or the throne. In arguing the claims of the gifts, this distinction between mere symbol and mere type-form is essential. The fact that the gifts are type-forms, by no means necessarily recommends them as symbols.

Finally we have to consider the value of the gifts as a means of training the powers of graphic expression and of developing æsthetic taste. It is true that some of the gifts may be used to represent certain forms of art and that the possibility of combination here is endless. But again it would seem that

this is beginning at the wrong end of the process. Certainly the principle of correspondence between individual and generic development, which the kindergarten has always claimed to apply, does not sanction this. If expression means anything in the child's development, it is the conveying to the outer world of sense the *individuality* of thought and power within. To be truly an expression of the individual, it must throw off conventional forms and seek those modes that give the greatest freedom. The gifts, when used so largely as a means of graphic and artistic expression, constantly force the child's representations into channels not his own, that do not express his own conceptions, and that even defraud him of his rights to individuality in error. This approaches dangerously near to the training of a "Schablonenmensch," as Froebel himself tersely put it in his own mother tongue. The representation of a rooster or a steam engine constructed in miniature out of triangles, loses little of the triangularity of its constituent parts. It is neither a counterpart of the child's mental image nor his own expression of that image. Such work, so prominent in the kindergarten, is questionable art and still more questionable means of æsthetic development. The child needs first a means of expression that will respond easily and rapidly to both his physical and mental individuality and which shall accord more perfectly with one of Froebel's soundest principles, the spontaneity of the child's activity. Such means, it seems to me, are furnished better in sand and clay molding, or in rough sketching. Spontaneity of activity is certainly not fostered by paper folding, or plaiting, or drawing or sewing to patterns. Again, the beauty of these conventional forms lies less in their perfection of form than in their coloring and their use in decoration. Take away these, and much of their charm is lost; we cannot therefore concede to them, as the purely conventional forms, anything like universality in the development of a broad æsthetic taste. Goethe has shown us, in his own experiences, that a true appreciation of art only comes by a close study of natural objects, with a view to their graphic reproduction.

In view of what has been said, it would seem that, instead of their present position of prominence, the gifts should at least occupy one of very subordinate and secondary importance in the child's play and efforts at self-expression.

But what becomes of the child when he leaves the kindergarten and enters the primary school? This sphere of educational work has recently been undergoing a process of transformation, not yet complete, which bids fair to revolutionize much of its work. New ideals stand before us; their *raison d'être* depends largely upon a closer sympathy with child-nature. But they have not yet taken possession of the schools at large; nor have the principles upon which they rest yet received full recognition. A glance at the history of the primary school, especially with regard to the first grade and its methods, gives one decidedly the impression of a close contest for the production of the best readers and the most perfect writers within a given time. The acquisition of formal facilities has been, and still is, too nearly the sole end of the primary grades. For many years little that is characteristic of the child's world ever entered with him into the school; and when in a few instances it did creep in, for some time it found itself in strange, inharmonious, and formal company. But I wish to take a stand in regard to the first grade that looks forward to more than a mere subordination of drill in reading and writing to thought. It would seem that a large number of experiences points to the fact that on the one hand the child does not at this age grasp the arbitrary symbols of reading as readily as later; on the other, that the acquisition of facility in writing at this age is a violation of the child's physical being. The latter belongs to a class of physical activities that I shall discuss briefly in conclusion. The former, reading, has long been a favorite theme in discussing the difficulties of the first grade, and ingenuity has fairly surpassed itself in its development of methods. Do what we will, we cannot escape the fact that some formal work is involved in teaching reading. At best, I believe we can only utilize as wisely as may be that age in which the child grasps such arbitrary symbols most readily.

Certain experiences point to at least a year later. In the training school of the pedagogical university-seminary at Jena, this idea is now regularly carried out and the results show that by the tenth year the child has lost nothing in the power to read, but gained much elsewhere. I formerly had opportunity to observe a good many foreign-born children, who were brought to America about the age of six, and who for various reasons did not enter school until seven or eight. If they possessed average ability, despite the drawbacks of a strange tongue, they were always comparatively quicker in mastering printed symbols, and in a year or two were beside those of their own age. If the same thing can be accomplished at a somewhat later age, in less time and with less formal drill, why do we harass our children and selves earlier?

In general, I believe that the acquisition of formal facilities, especially in the first grade, must at least be still further subordinated to those lines of work that deal with the child's natural sphere of thought and that call into more efficient activity his natural powers. When this has been done, primary teachers will have less cause to feel the discrepancy between their work and that of the kindergarten.

In conclusion, I wish to call attention to one line of work which kindergarten and primary school in recent years have pursued in common. I refer to those exercises requiring minute motor activity, such as plaiting, sewing, drawing to patterns, etc., which have constituted prominent occupations for the child. In the light of certain data which child-study has revealed concerning the physical growth and motor powers of the child between the ages of three and eight, these occupations are undoubtedly unsafe. During these years the child's physical activity and his power of motor control involve chiefly the body as a whole and the movements of the larger members. The whole arm is controlled more accurately and easily, and hence with much less expenditure of nervous force in proportion, for instance, than merely the forearm, hand, or fingers. The fingers, especially, require a delicacy of control and a minuteness of movement, either in writing or in the

occupations just mentioned, that are far beyond the natural power of the child at this age; hence the attempt to perform these activities is apt to result in an exhausting and injurious expenditure of nervous force. The slow diffusion of nerve energy and control, during the kindergarten and primary grade ages, also demands that there be a gradual rather than an abrupt approach to the exercise of such occupations.

My whole thought has been that in a far greater subordination of form to thought, in the removal of the phases of formalism peculiar to each, and in giving greater prominence and genuineness to those healthy means of education that call into activity all the child's natural physical and spiritual powers, kindergarten and primary school will be able to realize greater harmony in their work.

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VII

DISCUSSIONS

HIGHER EDUCATION OF WOMEN IN THE SOUTH

My paper on the above subject falls, in the October number of the EDUCATIONAL REVIEW[1], under the condemnation of Professor Charles Forster Smith for, first, "not trying to get at the facts as they are in 1894," and, secondly, for "contenting itself with quoting from Klemm's Introduction to Helene Lange's *Education of women in Europe*."

I think I can show these strictures to be a fresh illustration of that Homeric nodding which will go on despite the animadversions of critical centuries. My paper was written in 1892 and published in 1894; the conditions of women's education in the South did not in the meantime alter to the extent of justifying any considerable change in its statistics; and the facts that, according to Professor Smith, should have been included in these statistics, must have been given to the public several weeks after the paper was printed, since this appeared in the May number of the REVIEW and the catalogues with the "facts" did not come out till June. Nothing then save the gift of prophecy could have put the "facts of 1894" into my possession, and the professor doubtless knows that it is the gift of tongues and not the gift of prophecy which is granted us women. I was dealing with the facts in hand, and these permitted no rose-colored previsions.

The second point in the indictment, that I content myself with quoting Klemm's Introduction to Helene Lange's *Education of women in Europe*, comes somewhat oddly from so dear a lover of ample authorities and substantiated statement as Professor Smith seems to be. Had he been more exact in his quotations, he would have credited me with statistics from catalogues of representative schools in the twelve Southern States, and also from the report of the United States Commissioner of Education for 1888–89. This report seemed to me somewhat out of date, but as it was the only one sent me, I

[1] VIII: 287

concluded it embodied the latest printed results. If Professor Smith will do me the courtesy to glance, between nods, at my article on pp. 473–74 he will find the overlooked statistics; and I am sure I may trust his knowledge of the situation, and his interest in the question under discussion, to find between the lines of tabulation that kind of evidence for the truth of my position that goes nearer the sources of things than mere figures can.

That so earnest, able, and representative an educator as Professor Smith should think it worth while to put the hitherto prevailing illiberality of the educational powers that be, toward woman's education in the attitude of apology, is a hopeful augury—an ambrosial nod from Jupiter Tonans, which we gratefully accept as an offset to the Homeric nodding. Time was, and not so long ago, when even a concession so slight would have been considered an innovation as menacing as radical—I say "time was," though the recently announced decision of the University of Virginia rather discounts my use of the past tense instead of the present, notwithstanding the fact that *six* out of her twenty-six professors favor the admission of women to her halls! When such small and grudging gifts must be used to prove the case of progressive liberality toward woman's higher education, we can but feel that it is still far from its millennium; nevertheless the fact remains, stated by Dr. Smith, that "the reform is really going on faster than would seem from Miss Woodward's article," but the fact also remains that the increase in momentum post-dates the writing of her article; then the ball was at the top of the hill; now, it is—somewhere on the slope, thanks to the *patres conscripti* of the University of Virginia—we count the least gifts of the gods—and the facts that justify the somewhat better showings of Professor Smith's statistics.

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METHODS OF CHOOSING SCHOOL BOARDS AND SCHOOL SUPERINTENDENTS IN NEW YORK

The following tabular statements showing the method by which school superintendents and school boards are chosen in the cities and towns of the State of New York will be particularly valuable for reference in the course of the discussion now

pending in various State legislatures. It has been prepared by James Russell Parsons, Jr., director of the examination department of the University of the State of New York.

	SUPERINTENDENT OF EDUCATION	BOARD OF EDUCATION
Albany	Appointed by board	Seven members appointed by mayor for a term of seven years each
Amsterdam	One in each district, appointed by board of district	Elected, one board in each district
Auburn	Elected by board to hold office during pleasure of board (Laws of 1875, ch. 577)	Nine members elected at special election (Laws of 1875)
Binghamton	Appointed by board to hold office during pleasure of board (Act of 1880)	School commissioners elected in the various wards, together with the mayor (Act of 1880)
Brooklyn	Elected by board (Laws of 1873, ch. 420)	Appointed by mayor (Laws of 1880, ch. 377)
Buffalo	Elected by general ticket (Laws of 1870, ch. 519)	Board of examiners appointed by mayor (Laws of 1891, ch. 105)
Cohoes	President of board, appointed by ballot at joint meeting of common council and board of education, to hold office two years (Laws of 1869, ch. 912)	President of board and school commissioners elected in the various wards (Laws of 1869, ch. 912)
Corning	Appointed by board	Six members, elected (Laws of 1868)
Dunkirk	Appointed by board	Six members, elected (Laws of 1883, ch. 163)
Elmira	Appointed by board	Five commissioners, elected, one in each commissioner district, and two commissioners appointed by common council (Laws of 1877, ch. 50)
Gloversville	Appointed by board (Laws of 1890, ch. 55)	Elected for term of three years each (Laws of 1890, ch. 55)
Hornellsville	Appointed by board	Five members elected for term of five years each (Added to laws of 1873, ch. 386, by laws of 1888, ch. 294)
Hudson	Appointed by board (Laws of 1881)	Five members appointed by common council for term of five years each (Laws of 1881, ch. 55)
Ithaca	Appointed by board (Laws of 1874, ch. 125)	Twelve members elected for term of three years each (Laws of 1874, ch. 125, as amended by Laws of 1877, ch. 46)
Jamestown	Appointed by board for term of three years unless discharged sooner by said board (Laws of 1887, ch. 279)	Elected on the day succeeding annual school meeting (Laws of 1887, ch. 279)

	SUPERINTENDENT OF EDUCATION	BOARD OF EDUCATION
Kingston	Appointed by board	Four trustees of primary school districts and six trustees of "Kingston school district." Elected for term of three years each (Laws of 1863, ch. 300, as amended by ch. 40, Laws of 1864)
Lockport	Appointed by board (Laws of 1850, ch. 77)	Seven trustees elected, one in each of the seven primary districts and five trustees of Union district (Laws of 1873, ch. 234)
Long Island City	Appointed by board (Laws of 1871, ch. 461)	Appointed by mayor, one from each ward (Laws of 1871, ch. 461)
Middletown	Appointed by board (Laws of 1867, ch. 431, as amended by laws of 1870, ch. 368)	Nine members elected (Laws of 1867, ch. 431)
Mt. Vernon	Appointed by board (Laws of 1894, ch. 10)	Elected for term of four years (Laws of 1894, ch. 10)
Newburgh	Appointed by board	Eight members elected for term of four years each (Laws of 1865, ch. 78, amended by Laws of 1873, ch. 27)
New York	Appointed by board (Laws of 1851, ch. 386)	Twenty-one commissioners appointed by mayor (Laws of 1873, ch. 112)
Niagara Falls	Appointed by board (Laws of 1892, ch. 143)	Nine members appointed by mayor, appointment to be confirmed by common council (Laws of 1892, ch. 143)
Ogdensburg	Elected by board (Laws of 1857, ch. 382)	Nine members elected for term of three years (Laws of 1857, ch. 382)
Olean	Appointed by board	
Oswego	Appointed by board	Six members elected for term of three years each (Laws of 1879, ch. 46)
Poughkeepsie	Appointed by board (Laws of 1883, ch. 523)	Four members elected for term of three years each (Laws of 1883, ch. 523)
Rochester	Appointed by board for term of two years (Laws of 1882, ch. 120)	Commissioners of common schools elected in the various wards (Laws of 1880, ch. 14)
Rome	Appointed by board (Laws of 1885, ch. 352)	Elected for term of three years each (Laws of 1871, ch. 49)
Schenectady	Not mentioned in statute	Commissioners elected at special election for term of two years each (Laws of 1862, ch. 385)
Syracuse	Appointed by board	Commissioners of common schools elected for term of two years each (Laws of 1885, ch. 26)

	SUPERINTENDENT OF EDUCATION	BOARD OF EDUCATION
Troy	Appointed by board of commissioners (Laws of 1881, ch. 110)	"Board of school commissioners." Commissioners elected for term of three years each (Laws of 1880, ch. 32)
Utica	Appointed by board of commissioners to hold office during pleasure of board (Laws of 1873, ch. 666)	"Board of school commissioners." Commissioners elected for one term of three years each (Laws of 1842, ch. 137)
Watertown	Appointed by board	Elected at special election for term of three years each (Laws of 1865, ch. 520)
Yonkers	Clerk of the board appointed by board (Laws of 1881, ch. 397)	Fifteen members appointed by the mayor for term of five years each (Laws of 1881, ch. 397)

VIII

REVIEWS

Herbart and the Herbartians—By CHARLES DE GARMO, Ph. D., President of Swarthmore College, Pennsylvania. (In the *Great Educators Series*) New York: Charles Scribner's Sons, 1895. 268 p. Price $1.00

Competent judges are not likely to question that the most powerful stimulus which is now acting upon American educational thought bears the stamp of Herbart. While this is one of those numerous propositions that do not admit of positive proof, and that must stand at last as matters of judgment, still something approaching such proof can in this instance be adduced. Reference is made particularly to the recent translations of Herbartian works that have been published and circulated, such as Herbart's *Psychology* and *Science of education*, Lange's *Apperception*, Rein's *Outlines*, and Ufer's *Introduction*, but also, in a minor degree, to original works,—books, articles, and pamphlets—that have appeared from time to time. It will not be claimed that a list of educational publications equal in number, to say nothing of quality, appearing within the same time, or double the time, could be made up that would represent any other definite influence or school of thought.

The publications just named or referred to had given the pedagogical scholar who is unacquainted with German originals, an opportunity to inform well himself in respect to the Herbartian authors, literature, and doctrines, if in a somewhat laborious and fragmentary way; but there was urgent need of some single work, at once historical and critical, analytical and synthetic, that should serve as a conspectus of the whole movement, comprehensive, just, luminous. The teachers and pedagogical students of the country are now indebted to Dr. De Garmo, who is not only one of our leading educationists, but also our leading Herbartian, for such a work.

The author declares his purpose to be "to give a bird's-eye view of Herbart and his doctrines of education, both as presented by himself and as developed by his successors." He avows a purpose to refrain from "confusing refinements of

doctrine and to confine himself strictly to essentials." Part I is devoted to the master, and deals (1) with what Pestalozzi left for him to do; (2) his life and works; (3) his psychology; (4) his ethics; (5) the doctrine of interest; (6) instruction, and (7) school discipline. Part II is occupied with the extension and application of the master's educational ideas in Germany, comprising the work of Ziller, Stoy, Rein, Lange, and Frick. Part III deals with Herbartian ideas in America. The book presents to the reviewer two sides, either one or both of which may properly claim his attention. One side is the Herbartian ideas considered as a body of educational doctrine; the other, the writer's handling of these ideas. For the most part I shall confine my remarks to the second of the two phases.

My first observation is that the field is a wide one to cover in a 12mo volume of only 268 pages; but it must be said that the author's view is so full and clear, and his grasp so firm, that he does not, on the one hand, leave the central ideas bare and unintelligible abstractions, or, on the other, allow details to multiply on his hands until they break over the barriers and bury the reader in confusion. In happy conception of plan, and skillful execution of it, the book leaves little, if anything, that is material, to be desired.

The reader who first takes up the volume will naturally be curious to see how it deals with those features of Herbart's system of thought that lie most open to attack. These features are very wisely waived aside. We are told, for example, that it matters little whether "the supposed universe of monads" is a "sober reality or a phantasm conjured up by speculation." Again, the application of "mathematical calculus to mental movement and equilibrium," or "the quantitative method of psychological study," does not concern us, since the Herbartian movement took its rise from experience, "which has been brought under the general term *apperception*." Once more, "it is by no means necessary to accept his [Herbart's] metaphysical presuppositions as to the nature and original equipment of the soul." And finally, "it is a matter of indifference whether we accept his notions or Kant's as to our original mental constitution, for the teacher has no power to create or to destroy these original powers; he can merely work with what is given." Refusing from the first to hold a brief for the author of the system, Dr. De Garmo keeps his eye steadily on educational applications and educational outcome.

Here I may remark that he is now happier in adjusting Kant and Herbart than he was in reconciling the "germ" and the "architectural" theories of education some years ago in his *Essentials of method.* In effect the two problems are the same, and so are the two solutions, except that the new one is stated in more guarded language. We were formerly told that "*how* knowledge shall be acquired," etc., is predetermined as absolutely as "the form of the plant is involved in the seed from which it springs," but that, "*what* this knowledge shall be is not predetermined." The first statement is wholly true, and the second one largely so; but I am pleased to see that President De Garmo has not again assured us that "a child left at birth upon an uninhabited island, and nourished by beasts, would become a beast, at least so far as the content of knowledge is concerned." If this were true, then man is nothing in himself, but is the mere creature of environment. Then, to borrow the writer's figure, no essential difference would exist between the mind and a *camera.* A human infant nursing a she-wolf perhaps sees all that the cubs see in a jungle, but certainly somewhat more. Were it not so, then indeed it would be hard to see that the human mind has original power of activity in any sense that the description would not apply to the *camera,* and the difference between the new organic psychology and the old mechanical psychology falls to the ground. It is well for the teacher, like the Apostle to the Gentiles, to magnify his office; one of the strong points of the Herbartian system is that it tends to such magnification; but the fact cannot be concealed, nevertheless, that this tendency has its dangers, which are by no means slight. The truth is, the teacher is no more an architect than the infant mind is a seed-bed.

I cannot think that the handling of Wundt's views on apperception is altogether satisfactory. As they are here explained, they are at variance with the view which our author states thus happily :

"Every simple or complex perception (or sensation) which enters consciousness through the gates of the senses, acts as a stimulus upon the ideas possessed by the mind. It repels everything contrary to it that may be in consciousness, and attracts or recalls all similar things, which now rise with all their connections. This complex perception (or sensation) invades several other groups or series simultaneously, and thus

induces new conditions of fusion or arrest. While thus it causes a lively movement of ideas, it may be compared to a light casting its rays all around it. The stimulated mass of ideas raised simultaneously may be likened to an arched vault extending in all upward directions from the center. As long as this arching continues the central perception has, by virtue of its stimulating power, the controlling influence in consciousness," etc. (pp. 34–35.)

This view postulates the presence in the mind of some knowledge before the process called apperception can begin—knowledge the existence of which apperception itself does not explain. But Wundt makes the will "a necessary element in every sensation, so that if asked, What is sensation apart from all apperception? we should be compelled to answer, Nothing at all, for consciousness, since without apperception we should never have a sensation" (p. 38). Then without apperception we should never have a perception, or an idea. An attempt is indeed made to meet the difficulty by distinguishing between the *initial* form of apperception and the *cognitive* form. Thus we are told that the initial form "is such because it involves no previous knowledge." But this is beside the mark. It is subversive of the accepted sense of apperception. If we admit it, then Dr. De Garmo's "arched vault extending in all upward directions from the center" falls into ruins. If apperception involves assimilation, then it does not include that modicum of knowledge which exists before assimilation begins. Wundt's view distinctly turns the edge of the doctrine. Practically, the point may not be a very important one, but it must be faced in the interest of clear thinking.

At first view Part III may not seem to promise a wide field of interest. I assure the reader, however, that, upon the whole, it does not suffer from comparison with the others. In a sense, the author here appears at his best. In the chapters entitled "A new era in education," and "Proposed bases for the co-ordination of studies," he drops narration, exposition, and adjustment, and speaks his own free, individual thought. I am pleased to observe that the second of these chapters, which is the final one of the book, is not spoiled or marred by subservience to the conception of unity, which has so often tyrannized over the system-maker, whether a Herbartian or not. To be more definite, Dr. De Garmo, so far from feeling

bound, like the traditional Herbartian, to find a single "core" of interest in the whole group of school studies finds three such cores—the humanistic, the scientific, and the economic. Whether this selection of centers is the best one or not, interests one less for the moment than the mental habit that enables the author to make the selection.

Herbart and the Herbartians is a book that, both by reason of its opportuneness and its ability, is sure to attract the attention of practical teachers, of pedagogical students, and of writers for the educational and philosophical press. Unless I greatly mistake, it will become, in many a city, town, and country district, a local center of discussion and of thought-stimulus. In particular, it can hardly fail to excite much canvassing, and some recanvassing, of the Herbartian doctrines. Perhaps I do not transcend my sphere when I recommend to those who enter upon such canvassing or recanvassing three points as especially worthy to receive their earnest attention. One is the amount of ethical culture and training that can be obtained from the non-ethical studies. The second is the extent and limitations of the doctrine of interest. Here the door stands open for the entrance of diverse evils, provided teachers are left merely to accept *present* interest as their guide, regardless of efforts to *generate* new interests. But, thirdly, to keep the doctrine of concentration from degenerating into the most pitiful of all formalisms is perhaps the most urgent duty. At this point, it is none too soon to sound a note of warning. The study of Whittier's poems should, as a matter of course, be accompanied by the study of his life, and, to some extent, of his times; the contemporaneous language work and composition should also be keyed to the Whittier note, and the grammar work may be so keyed; but to make the parallel arithmetical examples out of the chronology of the poet's life, in the name of "concentration," is more than foolish, it is positively silly. It reminds one of the "blending system," once in vogue in certain National schools of England, as a means of teaching religion and morals. For example: "The children of Israel were sadly given to idolatry, notwithstanding all they knew of God. Moses was obliged to have three thousand men put to death for this grievous sin. What digits would you use to express this number?" "Of Jacob's four wives, Leah had six sons, Rachael had two, Hillah had two, and Zillah had also two. How many sons had Jacob?" I am

far from intending any disparagement of the doctrines of interest and concentration. I am merely seeking to prevent their abuse. They will not suffer in the hands of Dr. De Garmo, but I have not equal confidence in all persons who are now using the terms so glibly.

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Minerva: Jahrbuch der gelehrten Welt, IV Jahrgang, 1894–95. Strassburg: Karl J. Trübner, 1894. 930 p. 7 marks.

This book is printed and bound in the same handsome style as the three preceding volumes, but still continues to grow in size, having seventy pages more this year than last. The editors do honor to English educators by choosing for their frontispiece the portrait of Lord Kelvin (better known as Sir William Thomson), president of the Royal Society and professor of natural history in the University of Glasgow. In the endeavor to make the book as complete as possible, a large number of universities, colleges, institutes, libraries, museums, and observatories has been added every year; and, although from the first it has been comparatively complete for Germany, Hungary, and Switzerland, yet quite a number of important libraries and archives in these countries are now noticed for the first time. America receives more attention than heretofore, and numerous institutions from other lands are also added.

The whole is divided into four parts: (1) a classification of institutions according to their geographical location; (2) an alphabetical list of the institutions, with a description of each; (3) a statistical list, showing the number of students connected with the various institutions; (4) an alphabetical list of officers and professors, with a reference to the place where the institution with which each is connected is described. From the first part it is seen that, in the United States, there are described 29 so-called universities (Amherst, for instance, is among them), 7 colleges, 2 technical schools, 7 professional schools, 66 libraries (in addition to those connected with universities), 23 observatories, 6 learned societies, 5 museums, and 16 institutes connected with the government at Washington.

The "universities" mentioned for the first time are: Boston, Cincinnati, Colgate, Nebraska, Ohio, Wesleyan, and Western

Reserve. The institutions of Europe are treated more fully, while those of other continents are by no means neglected. Room for the additions is gained from the added pages and by omitting those portions of descriptions that have not been changed since the preceding volumes appeared. In each case, where such omission is made, reference is made to the proper place in one of the previous volumes. In the list of institutions, a *résumé* of the history of each is given, the regulations regarding membership, some outline of the plan of organization, and a statement showing the amount of endowment, income, and expenses. If it is a university or college, there are given a list of the faculties, the requirements for degrees, and a description of the libraries, laboratories, and museums belonging to it. If it is a museum, library, or archive, the names of the officers are given and a general description of the works contained.

From the statistical table it is interesting to compare the numbers in some of the largest universities in the world. Paris is the largest, having 10,643 students; Berlin is next, with 8343; then Madrid, with 5867. The second German university in size is Munich, with 3408; then Leipsic, with 3067. Some American universities have attendance as follows: Harvard, 3156; Michigan, 2659; Yale, 2202; Cornell, 1801; Wisconsin, 1207; Chicago, 878. These figures are for the winter term of 1893–94.

The book really forms an accurate, reliable, and annually revised encyclopedia *der gelehrten Welt*. Many more American colleges might be added to the list, and they doubtless would be, if proper data were sent to the publisher.

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Chronological outlines of American literature—By SELDEN L. WHITCOMB, A. M. With an Introduction by Brander Matthews. New York and London: Macmillan & Co., 1894, 286 p. Price $1.00.

Mr. Whitcomb seems to me to have produced a very useful manual, and to have deserved the gratitude Professor Brander Matthews bespeaks "for his immeasurable labor." The book is of course modeled upon Mr. Ryland's well-known handbook of similar title, but is in some respects an improvement upon its prototype. The historical references, as well as those to foreign literatures and the kindred arts, have been largely

increased in number and made with considerable care. In scope, too, Mr. Whitcomb's book is the wider; and as he does not pretend to set up for a critic, few persons that consult his pages will object to his inclusiveness, least of all the special students, who will recognize the thorough-going character of the compiler's researches—*e. g.*, in the neglected field of ante-bellum fiction.

In a work made up of dates and names, there must be some mistakes, typographical and otherwise, but after two careful readings I have failed to discover any worthy of note. Sins of omission cannot well be counted, for as Professor Matthews observes, the book does not pretend to be a bibliography, and we generally count as sins of omission what are after all mere failures to recognize our own favorite fads. I was reminded of this fact in an amusing manner when I was disappointed at finding in the column devoted to foreign literatures only two of Balzac's novels deemed worthy of mention. Mr. Whitcomb was not writing for the admirers of the great French master, but for the mass of American students and readers. For them he has done yeoman and praiseworthy service.

Although the thoroughness of the work is apparent on every page, it is most conspicuous in the treatment of the literature of the Colonies, which is precisely that portion of our literary history that we are most prone to slight. The early literary efforts of the South, too, which are usually slurred over, receive fuller treatment at Mr. Whitcomb's hands. He has also paid attention to periodical literature; but in this connection I could wish that he had mentioned the old *Southern Review* of Charleston and had given the dates of publication of publication. I think, too, that an index to important authors, not included in Part II, would facilitated the use of the manual. But this is to hold a on the mouth, for to wish that Mr. Whitcomb had added considerably to a labor that few men would have had the courage to undertake, smacks of an ingratitude I am far from

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A History of the United States—By ALLEN C. THOMAS, A. M., Professor of History in Haverford College. Boston: D. C. Heath & Co., 1894. 522 pp. $1.25.

American history does not lend itself easily to the limits of a school text-book—it includes three or four successive periods

with as many changes in conditions and ideals; the national history in itself contains a great variety of incidents, and the original colonies, and many of the States, must have special mention; the threads are numerous and intertwisted; and nobody can treat the period since 1830 without coming upon questions over which there are still bitter differences of point of view. The excess of matter and the greater fullness of the materials on the earlier period makes it difficult to preserve correct proportions. To this category may be added the puzzling questions of form, of the nature and degree of illustration, and of the historical geography.

To this task Professor Thomas has brought an excellent knowledge of the subject, a good, speaking style, and a singularly clear judgment. It is not a perfect book, but it is, perhaps, better designed and worked out than its predecessors. The book which it most resembles is Johnson's, as, in that sanest and broadest of text-books, the military history is brought into due subordination, and social and economic problems have their proper places, and colonial history occupies only about a third of the text.

In form the book is pleasing—there is a large type and an unusual amount of reading matter in proportion to the total number of pages. The pictures are chiefly excellent portraits. While the book lacks summaries and suggestive questions, it has tolerable maps; no author of a school text-book in this subject, except Johnson, has taken such pains with his maps, or made so few errors. One wishes that they were more accurate—but that is the invariable wish in examining such books. The treatment of public questions is broad, interesting, and impartial, without losing the American spirit. It is an honest, intelligent, and well-molded book.

One merit the book has which is so unusual as to be worthy of special mention, and which adapts it for teaching in the newer methods of school history. Each of the twenty chapters is preceded by a well-chosen bibliography, intended to lead the pupils to other authorities on the same period. As a book to be taught, to be studied, to lead to other reading, and to keep for reference, it deserves much praise.

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The First Latin Book—By WILLIAM C. COLLAR, A. M., and M. GRANT DANIELL, A. M. Boston: Ginn & Co., 1894. 286 p. $1.10.

First Latin Readings—By ROBERT ARROWSMITH, Ph. D., and GEORGE M. WHICHER, M. A. New York: American Book Company, 1894. 304 p. $1.20.

Latin Phrase Book—By C. MEISSNER. Translated by H. W. ANDEN, M. A. London and New York: Macmillan & Co., 1894. 316 p. $1.10.

The editors of *The first Latin book* have been long known through their excellent *Beginners' Latin book*. They wish it to be understood that their new book is not a revision of the former, nor intended to supersede that work; yet, as some schools may not be able to use so extended an introductory book as the *Beginners'*, they have planned a work which calls for about a third less time for its completion. "The reduction has been made almost wholly by shortening the exercises for translation, particularly those to be turned into Latin." The new book is printed on thinner paper, but contains ten pages more than the older one; it has seventy-two lessons against sixty-seven. Still it has a less number of exercises, and hence can be completed more quickly. The important changes in method are the earlier treatment of the pronouns, the subjunctive, the infinitive, and the participle, and the earlier introduction of reading lessons. There are also numerous changes in detail in which the editors seem to have profited by recent discussion. There are thirty-three illustrations, and the *colloquia*, so attractive a feature of the older book, are retained. The editors still adhere to their principle of producing a book which shall be a gate to the language rather than to an author, and so have refused to follow the example of others in keeping the vocabularies "down to the point of meagerness." Here it seems to me is the main question as to the *raison d'être* of first Latin books. The editors, with pardonable pride, state that their first book is being sold at the rate of 45,000 copies a year; yet, in the face of so tremendous an argument, I think that a beginners' book is an evil; and being an evil, the less there is of it the better. Hence I have viewed with pleasure the steadily diminishing bulk of such books. A student should be introduced to the author just as early as possible, and the time is coming when the beginner in September will reach his author in January. In many high schools of the West and South the entire preparatory Latin course must be compressed into three, sometimes into two, years; and a leisurely method,

which will be satisfactory for a curriculum continuing from four to seven years, is out of the question when there is so much less time at command. It is surely better that hurried students should reach their Cicero and Vergil rather than miss them altogether, even if their preparation for reading Latin may fall short of the ideal. But until someone can write a book of 176 instead of 276 pages, I commend this work of Messrs. Collar and Daniell as careful and scholarly and equal to the best.

After looking over Messrs. Arrowsmith and Whicher's *First Latin Readings*, one's first thought is that our grandfathers were right after all with their Latin Readers. Now that the Committee of Ten have told us that the preparatory Latin course is too meager, and that Cæsar is too hard for a first author, we wonder that we did not see it before—all of us, I mean; for some have been heretical for years. The book begins with 28 pages of Eutropius, then follow 32 pages of Nepos, 46 of Cæsar, 20½ of Gellius, 8½ of Cicero, and 13 of Livy. The object of the work, one may suppose, is to displace Cæsar. Most colleges require four books of Cæsar, equivalent to about 86 pages of Latin. In this reader are 46 pages of Cæsar,—to be sure the easiest parts of the narrative,—yet more than half as much Cæsar as the colleges demand; then, in addition, is the varied assortment of authors, the change in subject-matter, the careful gradation in difficulty of reading, and at the end 150 pages of Latin read instead of 86; here is a great gain in every way. At the foot of each page is a special topic in grammar for study, the cases where the grammatical matter is applicable being marked by a reference figure. In this way a complete theory of syntax is gained. How much better than a laborious *a priori* memorizing out of a grammar or, an old-fashioned beginner's book! There are numerous maps and pictures; perhaps the smoke from the altar in the frontispiece picture might be happily lessened in the next edition. The quantities are marked throughout the book, and the text is broken with a running introduction. The notes are simple, giving much translation, and in the doubtful authors variations from classic usage are pointed out. There are short biographies of the authors, and also brief bibliographies. In the vocabularies I doubt the wisdom of placing the compound verbs with the simple. There are occasional mistakes in the grammatical references, *e. g.*, reference 1 on page 100.

The book deserves a hearty welcome from Latin teachers, and will doubtless receive it.

Meissner's *Latin phrase book* has passed through six editions in Germany and three in France. In seventeen chapters, covering such subjects as the world and nature, arts and sciences, commerce and agriculture, each chapter being carefully subdivided, a list of Latin phrases is given, accompanied by English translation. For instance, education is a subdivision of Chapter VII, arts and sciences, and we learn that *ludus* is an elementary school; *schola*, a school for higher education; *scholam frequentare*, "to go to school." Then, again, under the sub-rubric "Commerce in general," *negotii bene gerentes* means "good men of business"; *nummus iactatur*, "the bank-rate varies." At the end of the book is an alphabetical index in Latin. It is difficult to see how such a book could be used in American schools. It could hardly be studied through in course, and is not well arranged for ready reference. Its chief value, apparently, is to serve as an aid in Latin composition; and in Europe, where original Latin essays are required in gymnasiums and lycées, such a work has its value. In this country the tendency seems fixed toward imitation of the phraseology of an author previously read in the Latin, and so there is no special endeavor made to put a student in possession of so wide a phraseology of Latin in general. But any Latin teacher can read the book through profitably, and in some college Latin composition courses the work may be found serviceable.

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NOTES ON NEW BOOKS

The mention of new books in this place does not preclude extended critical notice hereafter.

Steel's *English grammar and analysis* (New York: Longmans, Green & Co., 300 p. $1.20) is a text-book in which "the language itself has been made to furnish its facts in such a way as to assist in the classification of them, and in the establishment of principles." All other writers on grammar would probably make the same claim. Fully one hundred pages are devoted to the derivation of words and a history of the English language. The exercises are thrown into the concluding pages—a fact which will not in itself commend the book to American

teachers.——Dr. George Bruce Halsted, whose services to the cause of the new geometry are well known, has translated from the Russian an address by Professor Vasilies, delivered at the University of Kasan, in October, 1893, on *Nicolai Ivanovich Lobachevsky* (Austin, Tex.: The Neomon, 1894, 40 p.), from which exact information concerning the man and his remarkable mathematical discoveries can be obtained.——*The Teacher's mentor* (Syracuse, N. Y.: C. W. Bardeen, 1894, 417 p. 50 cents), is the name of the ninth issue of the Standard Teachers' Library, and contains four first-class and practical essays: Buckham's "First steps in teaching," Huntington's "Unconscious tuition," and Fitch's "Art of questioning," and "Art of securing attention." All are too well and too favorably known to require further comment.——Professor Emerton has followed up his *Introduction to the study of the Middle Ages* with a capital volume on *Mediæval Europe* (Boston: Ginn & Co., 1894, 607 p. $1.65), in which the period from the death of Charlemagne to the latter part of the thirteenth century is covered. The book will be welcome in all colleges where history is properly and generously taught.——Professor Platner's *Selections from the letters of the younger Pliny* (Boston: Leach, Shewell & Sanborn, 1894, 92 p. 25 cents) puts a considerable amount of charming Latin reading within the reach of large numbers of students.——In his *Progress in language* (New York: Macmillan & Co., 1894, 370 p. $1.90) the Danish Professor Jespersen has written a very valuable introduction to the study of comparative philology from the standpoint of English.——The latest addition to the Students' Series of English Classics is *Selections from Washington Irving*, edited by Isaac Thomas of New Haven (Boston: Leach, Shewell & Sanborn, 1894, 383 p. 50 cents).——A well-known scholar, Dr. Paul Groth, is the author of *A Danish* and *Dano-Norwegian grammar* (Boston: D. C. Heath & Co., 1894, 153 p. $1.00).——Rev. A. J. Church adds to his deservedly popular series of stories from history and literature a new *Stories from English history*, amply illustrated (New York: Macmillan & Co., 1894, 240 p. $1.00).——Two new works on chemistry, both admirable in arrangement and scientific in method, are Schorlemmer's *Rise and development of organic chemistry* (New York: Macmillan & Co., 1894, 280 p. $1.60) and Newth's *Text-book of inorganic chemistry* (New York: Longmans, Green & Co., 1894, 667 p. $1.75).

IX

EDITORIAL

One of the chief storm-centers of educational activity at present is the State of Illinois. The University of Chicago is not only taking a commanding position before the country, but it is stimulating and helping the high schools and colleges in its neighborhood to a remarkable degree. Colonel Parker's work at the Cook County Normal School was never so well organized nor his assistants so competent and efficient as now. At Bloomington and Normal a movement of great vigor and promise is under full headway, led by Dr. George P. Brown, Principal John W. Cook, and Professors McMurry and Van Liew. At the State University Professor Krohn has thrown himself with characteristic ardor into the work of child-study, and Professor Eckoff is depended upon to lend the weight of his position and his learning to the general movement throughout the State.

The announcement by President Harper that the University of Chicago is now ready to build up a department of education, and has been at work on plans for it, has given great encouragement; for it makes it certain that another great university will be added to the list of those whose newly aroused consciences lead them to take a real, and not merely a nominal, interest in education.

The very powerful paper by Professor Van Liew, published in this issue of the REVIEW, marks the beginning of a new stage in the history of the kindergarten movement. Up to this time those educationists who appreciated the principles and spirit of the kindergarten have given it unwavering and uncritical support, because it was on trial for its life. Now, however, that it has become firmly established and will soon be a part of every well-organized elementary school, the time has come to save it from its friends.

As hitherto conducted the kindergarten has been a thing apart. It has elaborated a technique and a method peculiar

to itself. This technique and this method have been narrow rather than broad, in antagonism to the principles of good elementary teaching rather in sympathy with them. A crude and fanciful psychology, and some of Froebel's very uninspired and uninspiring dogmas, have been depended upon to sustain this position. A more accurate psychology, however, and the need for a close relation between kindergarten and elementary school work, technically so-called, are forcing a reconsideration of many points in kindergarten practice. Out of this scientific and sympathetic criticism only good can come, and already the more intelligent and better trained kindergartners are giving evidence that the spirit of progress and truth is at work to correct the errors that have disfigured much of their practical teaching.

The last annual report of Superintendent Lane of Chicago contains conclusive evidence that, notwithstanding the ravings and revilings of certain newspapers specially prepared, as Mr. Charles A. Dana would say, to be read by fools, the public schools of that city are making substantial progress. The city has assumed the burden of maintaining the kindergartens formerly supported by the Froebel Kindergarten Association and the Chicago Kindergarten College, and is preparing to extend and develop the system. The cadet teachers, who in the past were supposed to be fitted for their life-work by rendering "substitute service" for the short term of five months, now receive regular instruction in the principles and methods of teaching for three hours each day during the probationary period. This amount of professional training is small when compared with what is required in many other cities, but it is a good beginning. When Chicago awakes to the necessity for thorough professional training for her teachers, she will not be content with a normal course of less than two years. School libraries have been established, and the regular curriculum has been re-enforced by a well-selected list of supplementary books which introduce the pupils to science, literature, and history. The course of study has been brought into line with the requirements of modern civilization. Manual training has been introduced into many grammar schools and is rapidly making its way. Notwithstanding the howls of the Philistines, the eye no longer says to the hand in

Chicago, "I have no need of thee." More than any other city superintendent in the country, Superintendent Lane has been called upon to resist the *civium prava jubentium ardor*. He has stood nobly for the right. He deserves the thanks of progressive teachers throughout the land.

By the death of Miss Frances Mary Buss, Head-Mistress of the North London Collegiate School, London has lost one of the pioneers of woman's education. In 1850 Miss Buss, with her mother, started a small private school in Camden Street. Afterward, at intervals, this school was assisted by grants from the Brewers' Company and the Clothworkers' Company, and thus the North London Collegiate and Camden Schools for Girls came into existence. The creation and development of these justly celebrated schools constituted the chief work and interest of Miss Buss' life, but she was actively engaged in every important movement in the English metropolis either to improve the opportunities for women's education or to elevate the profession of teaching. She was officially connected with the College of Preceptors, the Training College for Women teachers at Cambridge, and the Teachers' Guild, and took a large part in founding the Association of Head Mistresses of Public Schools. Miss Buss was actively engaged in school work for forty-four years. During this period, the English public school system was founded and developed. During this period, women for the first time became a conspicuous factor in educational work. It is to the zeal, the energy, and the good judgment of women like Miss Buss, who early recognized the necessity for professional training as a preparation for teaching, that the high position now held by women in the educational field is in large measure due.

As previously announced, the Department of Superintendence of the National Educational Association will hold its next annual meeting in Cleveland, O., on February 19–21. The programme, already partially announced in these pages, has been completed by the following additions: President Thwing of the Western Reserve University will present a paper on the teaching of political economy in schools; Professor Bryan of tne University of Indiana will treat of "Child-

study, systematic and unsystematic"; and Colonel Parker will show some of the applications of child-study in school work. All the indications are that the meeting will be largely attended and eminently useful.

The Legislature of the State of New York should waste no time in deciding between the two measures that are before it, dealing with the New York City school system. One of these bills is as preposterous an accumulation of "jobs" as ever got together in a single proposition. It calls for a paid school commission of five members, each to receive a salary of $8000 a year for a term of five years. The gentlemen who hope to occupy these berths are loud in their praise of this arrangement. The folly and ignorance of this proposition, however, are outdone in the retention of the local trustees with all of their power for evil and their divided responsibility. In the Twelfth Ward, for instance, with its twenty schools, five trustees—of whom no one ever heard and whom no one would know or recognize if he did hear of them—are almost the absolute masters of a patronage amounting to nearly $650,000 a year, and of the fortunes of about 60,000 children.

To do away with all this, and to substitute a simple, effective, and responsible school administration is the sole object of the bill indorsed by the Committee of Seventy. This bill, originally drawn by Mayor Gilroy's excellent commission, has been carefully examined and indorsed by the Committee of Seventy's subcommittee on public schools, by the City Club, by the Good Government clubs, by the Board of Education, and by every respectable newspaper in the city. It should be a law by March 1, and in July the reorganization that it contemplates should be effected.